

TOWARDS A THEORY OF GENERATIVE TEXT GRAMMARS

A Thesis Submitted
in Partial Fulfilment of the Requirements
for the Degree of
DOCTOR OF PHILOSOPHY

By
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to the

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
JANUARY, 1981

THIS THESIS IS HUMBLY DEDICATED

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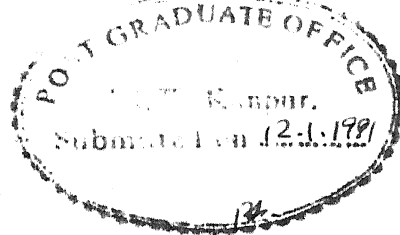
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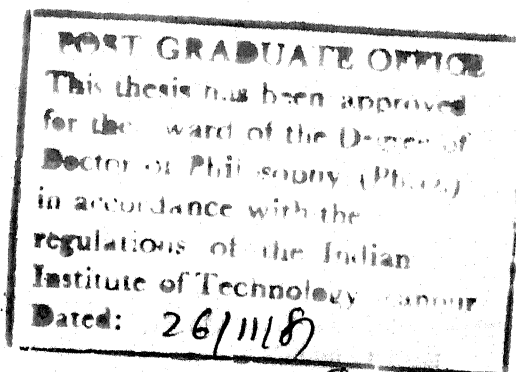
CERTIFICATE

This is to certify that the thesis "TOWARDS A THEORY OF GENERATIVE TEXT GRAMMARS" submitted by Thomas Chacko in partial fulfilment of the degree of Doctor of Philosophy to the Department of Humanities and Social Sciences, Indian Institute of Technology, Kanpur, is a record of bonafide research work carried out by him under my supervision and guidance. The results embodied in the thesis have not been submitted to any other University or Institute for the award of any degree or diploma.

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Department of Humanities & Social Sciences
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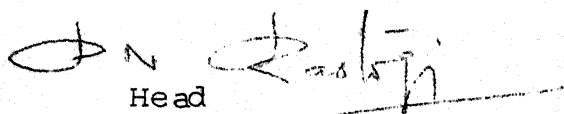


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This is to certify that Mr. Thomas Chacko has satisfactorily completed all the course requirements for the Ph.D. Programme in English (Linguistics). The courses include:

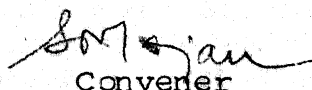
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| E-Eng | 701 | Introduction to Linguistics |
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| H-Eng | 715 | Methodology of Teaching and Research in Literature |
| H-Eng | 704 | Advanced Linguistic Theory |
| H-Eng | 720 | Stylistics |

Mr. Thomas Chacko was admitted to the candidacy of the Ph.D. degree in October 1977 after he successfully completed the written and oral qualifying examinations.



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My thanks to numerous other friends and well-wishers.

T.C.

- - - -

Words strain,
Crack and sometimes break, under the burden,
Under the tension, slip, slide, perish,
Decay with imprecision, will not stay in place,
Will not stay still

And so each venture
Is a new beginning, a raid on the inarticulate
With shabby equipment always deteriorating
In the general mass of imprecision of feeling,
Undisciplined squads of emotion.

Four Quartets

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SYNOPSIS

Name : THOMAS CHACKO
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Text Grammars

The thesis presents the case for a theory of grammar that treats texts (defined as natural sequences of inter-related sentences), rather than isolated sentences, as its data. The sentiments behind the work are, by no means, new. But the thesis strives to integrate into one extended and consistent argument, the vague, but really rebellious, feelings against the sentential constraint experienced by various linguists, and the various insights into textual or inter-sentential relations that dot linguistic theorizing irrespective of individual frameworks. It is thus a testimony at once to the author's feeling that the methodological constraint of the sentential boundary has outlived its usefulness and his desire to search for generalisations that cut across the confines of different schools of thought. The sentential constraint does not go well with either the proclaimed goals of linguistic theory or the ennobled vision of man presented and cherished as an article of faith by linguists led by Chomsky. Whatever is new in this work has been motivated as

much by a desire to broad-base modern linguistics without having to sacrifice its rigour, as by a desire to preserve this concept of man.

The thesis is divided into four chapters.

The first chapter deals with the ancestry of the problem in available literature. Though intended to be nothing more than a brief overview of traditional approaches to the study of texts, it presents information from various fields like anthropology, sociology (especially ethnomethodology), psychology, and Artificial Intelligence. Besides, it also reviews text-linguistic studies done explicitly within the framework of the continental school of van Dijk, Petofi, Rieser, Enkvist and others. Work within the tagmemic framework done by Kenneth and Evelyn Pike, Grimes, Klammer etc. is also taken note of, as is that of systemic linguists like Halliday, Hassan, Sinclair, Coulthard etc. The author's dissatisfaction with these treatments springs from the fact that some of them, especially the continental school, in their enthusiasm for text-logic, world-structure and such concepts underlying language, make the deep structures so abstract that it becomes extremely expensive to raise them to the surface. Systemic linguists and tagmemicists, on the other hand, are content with describing and classifying, with no attempt at formulating explanatory generalizations. The ethnomethodologists and workers in Artificial Intelligence, in their own different ways, are interested in the entire spectrum of intelligent behaviour. Their purpose is the understanding and

representation of the most general epistemic equipment of man and hence they provide only a standard of explanatory adequacy for linguistic theory, neither an identification of the object of linguistics nor a methodology for the restricted purposes of linguistic investigation. In other words, those who took up cudgels on behalf of texts did not succeed in presenting a strong case, and their chargesheet against the tyranny of the sentence turned out to be weak. This thesis seeks to remedy both the situations.

Chapter II presents the philosophical and meta-theoretical inspiration behind the entire enterprise. It is a statement of our understanding of the nature of linguistics. We envisage syntax as a theory of semantics, i.e., as a set of principles with which man manages the enormous semantic mass that he carries in his mind in the course of his life. This view is related to the concepts of linguistic semantics, generative semantics or abstract syntax, and the emerging field of semantax. Syntax as redefined here expresses its true nature most strikingly in the structure of discourse. By implication, then, the task of linguistics is to study the properties of the syntax of 'texts', i.e., to account for 'coherence' in terms of 'cohesion'.

Chapter III presents a tentative model of the phrase structure of English incorporating textual or inter-sentential relations. It posits a new category of textual syntax, viz., 'Rt' (Relatant) and an idealized notion "immediately preceding S". Inter-sentential relations are sought to be specified

unambiguously in the generative component of the grammar in terms of Rt and the immediately preceding S. Besides, it also seeks to define 'sentence' in a way consistent with logic and with the insights of psychology into human information processing, and defines texts in terms of sentences.

Chapter IV shows how modern linguistic theory, as represented by the dominant paradigm, viz., TGG, can rid itself of at least some of its internal inconsistencies by explicitly defining texts as its data, (e.g., inconsistency surrounding the concept and use of the term 'sentence'). It is also shown how such a redefinition of data can enrich the empirical content of many of TGG's crucial theoretical terms like competence, fluency, context sensitivity etc. It takes a new look at the so-called thorny issues in linguistic theory viz., acceptability and ambiguity and shows how a text grammatical point of view can radically alter our concepts of both these phenomena. It also projects a pro-form paradigm which distinguishes between pragmatically controlled reference mechanisms, and 'anaphors' or text-syntactically controlled reference mechanisms, and shows both how conventional classification fails to capture this distinction and how it is severely limited by its exclusive concern with pro-'nouns' and the consequent neglect of other pro-forms. Thus, the study of pronominalization is placed on a wider footing. Moreover, this is integrated with other processes like NP definitivization and NP deletion. All three are characterised as manifestations of one and the same underlying process viz.,

'information aging', or the process by which new information, introduced as indefinite NP's, turns into old information, manifested as definite NP's, pronouns, or as deleted NP's.

Besides, this chapter also shows how all connectives (including what are variously called sentential adverbs, transitional devices, co-ordinating and subordinating conjunctions) can be given a unified treatment by considering them all as instruments of 'information augmentation', i.e., by recognizing the role they play in communication by virtue of their being able to specify the kind of semantic relations obtaining between sentences joined by them. This chapter also endeavours to demonstrate how text theory can give an elegant accounting of not only those phenomena that are inter-sentential according to current theories, but also of phenomena that are sentence-internal in the latter's reckoning.

The thesis thus is a demonstration of why TG linguistic theory has to redefine its data, how it can deal with the additional data, and how such a redefinition of data and revision of methodology will help it gain in simplicity, structural elegance, and explanatory power.

Chapter 1

Introduction

1.1 Genesis of the Problem

The research reported in this work had a very modest beginning. Originally it was meant to be an inquiry into the sentence-reduction processes of Malayalam, a major Dravidian language. The inquiry was to be conducted within the framework of Transformational Generative Grammar. But, as the hour for grappling with facts of language on their own terms approached, we felt that the cosy confines of a ready-made framework would have to be sacrificed. For example, we realized that certain lexical items which could best be understood and explained as instances of sentence-reduction were, in conventional TG, either neglected or categorised in such ways as to camouflage their true nature. The theory also seemed to lack in the theoretical terms with which to state such reduction processes; and the domain within which statements of these reduction processes were to be made appeared to be larger than the domain of TGG. These facts appeared strange especially in the light of TGG's own emphasis on descriptive and explanatory adequacies.

We also observed that there were more instances of phenomena neglected by TGG as well as those that were treated diversely though they could be given a unified treatment from

the perspective of a domain larger than the conventional one. Probing further into the reasons for such a state of affairs, we came upon a disturbing discovery, viz., that the theory had in-built constraints that prevented it from achieving its own goals. The most stringent of these constraints was the methodological one of limiting linguistic inquiry to isolated sentences. Hence our progress towards a theory of generative text grammars that defines texts rather than isolated sentences as the natural domain of linguistics, while retaining the same philosophical and meta-theoretical aspirations that characterise TGG.

1.2. The primary motivation behind our argument for extending the data base of linguistics by incorporating textual relations was provided by the fact that such an extension would achieve a double purpose. It would enable linguistics to provide more general explanations for phenomena like NP definitivization, pronominalization, NP deletion, VP deletion, inter-clausal government, inversion constructions; contrastive stress etc., than could be given within the existing sentential framework. Besides, a linguistic theory of texts could also explain some additional facts of language, like the incapability of certain sentence-types to function as conversation initiators, the unnaturalness of certain sentence sequences as well as combinations, the commonality that underlies the conjunctive devices in spite of their superficial formal dissimilarities. It was also

felt that a redefinition of linguistic data as texts would lead to ~~the~~ removal of some inconsistencies in linguistic theory, enrichment of the empirical content of its terms and consequent increase in explanatory and predictive power.

Naturally, these feelings first occurred to us not in such a clear fashion as they are presented here. They came first as flitting phantoms, indeterminate forms, vague notions. We had to change our lenses before we could register them properly and observe them closely.

1.3. In our attempt to clarify the issue for ourselves, we looked for earlier attempts at dealing with anything that was related to, or resembled, the notion 'beyond the sentence'. Any inquiry made within linguistics proper, or in its neighbouring disciplines into units larger than, and relations between or across, sentences was welcome as a means for identifying the shape that others had given, or sought to give, to what, at best, was a fledgeling intuitive notion in our thinking. Traditional grammar, discourse analysis in Harrisian framework, tagmemics; systemic grammar and text linguistics were identified as quarters from which linguistic insights into supra-sentential phenomena could be expected. Anthropology, ethnomethodology, cognitive psychology and Artificial Intelligence were areas outside of linguistics but seemed to be able to guide us in our initial stages. We shall, in what follows, attempt to deal as briefly and

cogently as possible, with the contributions of these approaches to the study of phenomena beyond the sentence.

1.3.1. Traditional grammarians like Jespersen and Christophersen were able to make use of pragmatic and syntactic aspects of textual cohesion with no self-consciousness as to whether these formed part of linguistic data or not. Thus Christophersen (1939) uses the notions of 'familiarity' and 'unfamiliarity' in his study of the English article system. He says, "the article the brings it about that to the potential meaning (the idea) of the word is attached a certain association with previously acquired knowledge This is what is understood by familiarity" (Christophersen, 1939:72).

Jespersen (1949) also uses the same notion with the difference that he posits 'stages' of familiarity dependent on the stages of reliability of the basis of common understanding developed in the course of communication (Jespersen, 1949:417). But though these grammarians have recognized the importance of text-syntactic information in the explanation of deixis and anaphora, they have not explored the implications of these for the study of language in general. Thus there is no comprehensive treatment of text processes on their own terms.

1.3.2. Bloomfield (1933) definitely believed in the absolute syntactic independence of the sentence. Yet he did not lose sight of the existence of sentences of the type that Waterhouse (1963) called dependent sentences. Following

Bloomfield, Waterhouse characterises these sentences as additive, substitutive and truncated i.e., sentences with (a) overt sequence-forming particles (b) with anaphoric expressions and (c) sentence fragments or elliptical sentences e.g., sentences with 'moreover', with pronouns, and sentences like 'I will'. The implication is that such expressions can be understood only with reference to a previous linguistic context. Hence the term 'dependent sentence'. Yet, neither Bloomfield nor any of his followers tried to examine the consequence of this phenomenon for the general theory of grammar which defined the sentence as "a construction that is not part of a larger construction". In other words, they failed to integrate the existence of dependent sentences and related facts into an empirical motivation for defining the data of linguistics as texts.

1.3.3. Harris (1952), though electing to extend the results of descriptive linguistics to domains beyond the sentence, is handicapped by his exclusive concern for distributional properties, probably a legacy from his work in sentence grammar. Thus, as Chomsky (1977) correctly observes, even his concept of transformations is brought down to the level of a mere methodological aid i.e., transformations are considered a methodological device in the hands of the analyst to "reduce the set of complex sentences of discourse to a form in which they would be susceptible to analysis by the methods devised for sentences and their parts" (Chomsky,

1977)). Thus for Harris, the sentence still provides the structural domain within which to state relations and constraints and the highest good of discourse analysis is to state rules governing the 'ordering' of simple sentences - result of the idealization of texts through transformations - in discourse. The concerns of his theory turn out to be narrow and the resultant set of statements can hardly claim to constitute a generative grammar.

1.3.4. The tagmemic school has the distinction of having gathered the maximum amount of textual data ever compiled by any linguistic school. Numerous publications of the Summer Institute of Linguistics are entirely devoted to the presentation of texts - narratives, conversations, literary works, riddles, folktales - from an astonishing variety of languages. Yet the attempt at any explicit explanatory theorisation is hopelessly out of proportion with the volume of collected data. Grimes (1975), Pike (1967), Pike and Pike (1977) thus abound in scattered insights, independently valid observations and specifications of the inner structure of individual texts. But one looks in vain for a sufficiently restricted theory of texts. Probably being the last cohesive group in linguistics of the bearers of the positivist-behaviourist banner, they represent an extreme position in their attitude to data viz., that of clinging fast to it. This position, undoubtedly, is diametrically opposed to that of conventional TGG. Thus while the tagmemists stay firmly rooted in

data, the transformationalists fly high above it: the former get submerged in the sea of phenomena, the latter gasp for breath in the rarefied regions of abstraction. In either case, asphyxiation is the lot of the theory. Thus Pike (1967) places the study of sentence in an integrated theory of human behaviour in the following fashion, "Hierarchical structure does not stop with the sentence, nor begin with it. Rather it must begin with the total language event in a total cultural setting - which in turn is in a total physical setting" (Pike, 1967). Needless to say, sentence or text, viewed as spanning the gap between phonetics and geography will hardly lead to any significant enlightenment of language as such. A theory of text grammars envisaged by us seeks to avoid the extreme positions represented by TGG and tagmemics.

Grimes (1977), however, has some very general and illuminating comments to make about the properties of texts. He identifies three aspects viz., content, cohesion, and staging, that are common to narrative, hortatory, expository, and expressive forms of discourse. He characterises them in the following way,

Content refers to what we normally think of as semantics Cohesion has to do with redundancies in text: how things one is saying now relate back to all that has gone before. The third, staging or topic or thematic structure, deals with the way the speaker controls his perspective from which he presents everything he says" (Grimes, 1977:123).

Unfortunately, a little later Grimes manages to confuse issues by calling content as the 'bare bones of what we are saying' and cohesion as the way 'we relate what we

are saying to the hearer'. The reader will have occasion to see how in the later chapters of the thesis we use terms identical with those of Grimes but not with the kind of semantic hotch-potch served by him.

1.3.5. The London School of linguistics, right from the time of Firth has been interested in textual phenomena. The systemic grammarians wearing the Firthian mantle now also attach great importance to textual relations. Halliday (1967) and Halliday and Hasan (1976) clearly establish their interest in text. The latter epitomises the results of systemic grammatical inquiries into text. The theoretical motivation behind their work is essentially the same as that which has prompted us, as well as other textlinguists, to focus attention on relations that cut across sentence boundaries. Underlying all these efforts is a realisation of the fact that text creation is the essential function of language and that it is part of the native speaker's linguistic ability to tell texts from non-texts.

However, there is an inexplicable reluctance on the part of systemic grammarians to grant any 'structural' status to texts. What a text has, instead of structure, is 'texture', which is a function of the structure or the relations among the elements of the sentences, clauses, or groups that 'hang together' to form a text (Halliday and Hasan, 1976:7). Structure, thus, is exhausted at the level of the sentence. Such refusal to view text as structured is

inconsistent with viewing text creation as the essential function of language and text as the natural domain of linguistic inquiry. For the business of linguistics is to uncover structure at any level of language it is invoked to study. Moreover, the reluctance to grant grammatical structure does not go well with the systemic grammarians' descentance from the Firthian family tree. Firth, in The Tongues of Man, observes,

Even within the language system itself, what is said by one man in a conversation prehends what the other man has said before and will say afterwards. It even prehends negatively everything that was not said but might have been said. This inter-related prehensiveness must be taken as a fundamental principle even in phonetics and formal grammar" [Emphasis mine: TC] (Firth, 1966:111).

The difficulties that systemic grammar gets into because of its ambivalent attitude towards text are amply illustrated by the following explication of their model by Halliday and Hasan;

Cohesion is expressed partly through the grammar and partly through the vocabulary.

We can therefore refer to grammatical cohesion and lexical cohesion The types of cohesion dealt with in Chapters 2 to 4 (reference, substitution, and ellipsis) are grammatical; that in Chapter 6 is lexical. That dealt with in Chapter 5 (conjunction) is on the border line between the two; mainly grammatical, but with a lexical component in it. It is important to stress however that when we talk of cohesion as being grammatical or lexical we do not imply that it is a purely formal relation, in which meaning is not involved. Cohesion is a semantic relation. But like all components of the semantic system, it is realized through the lexico grammatical system" (Halliday and Hasan, 1976:5-6).

Clearly, the difficulties are traceable to the authors' not having recognized clearly the relation between coherence and cohesion i.e., between the semantic fact and the syntactic means for achieving it. Thus they fail to capture a generalization based on the text-syntactic functional commonality among reference, substitution, ellipsis and conjunction. Moreover, the maintenance of a distinction between clause and sentence, and not making any distinction between simple sentence and text will lead to exactly the same kind of troubles that sentence-centred theories also face. What is more, the theory stays content with describing, listing, and exemplifying cohesive devices with no attempt at making any explanatory generalization.

1.3.5.1. The work in conversational analysis done by Sinclair and Coulthard (Sinclair and Coulthard, 1975; Coulthard, 1977) is also carried out within the systemic framework. This work also denies structure to levels beyond the sentence and establishes non-grammatical categories of discourse analysis. Their categories are; setting, initiation, response, move, turn etc. Clearly, whatever the sociological or psychological worth of these categories, their linguistic relevance i.e., relevance in explaining the mechanisms by which speakers establish coherence in connected discourse, is doubtful. Besides, the exclusiveness of attention paid by them to conversation, especially conversation confined

to highly controlled and conventionally interaction-dominant situations like classrooms, interviews, doctor-patient sessions, makes one suspect whether in their opinion discourse necessarily involves jumping across speaker boundaries, i.e., transition or turn-taking between speakers.

1.3.6. Searle's speech-act theory and Grice's conversational postulates are also attempts to relate speech to factors behind or beyond it. They attempt to demonstrate the implicit psychological or interactional principles underlying linguistic exchange and the principles of behavioural knowledge that enable humans to produce and understand speech as part of an action system. 'Conversational maxims' and 'sincerity conditions' are examples of such principles. In these cases again, the theories range over phenomena that are not purely sentential. But their primary concern is the description of an ideally disciplined system of behaviour that ensures smooth social interaction, or, equivalently, an explanation of the smoothness of everyday interaction in terms of ideal regulatory principles. Undoubtedly, the interface between these and linguistic is bound to be extremely interesting, but the fact remains that philosophers and linguists interested in this interface have often tended to concentrate on the logical and philosophical aspects rather than the linguistic ones.

1.3.7.1. The most single-minded study of the properties of texts and the problems of text linguistic methodology by far has been conducted by the predominantly European school of Textlinguistics, comprising Teun A. van Dijk, Hannes Rieser, Janos Petofi, Nils Erick Enkvist, Wolfgang Dressler, W. Kummer and their associates. Most of them share a primary interest in formal semantics including pragmatics and logic. They endeavour to explicate the structure of texts in terms of the apparatus already available, often using the actual or modified versions of the existing models, in these areas. Over the years, they have also moved very close to cognitive science and Artificial Intelligence. But here, unfortunately, the similarities end.

In spite of the cohesiveness of the group as a whole (evidenced through collaborations in anthologising), the individual approaches differ markedly from one another. As a consequence, there has not emerged as yet, a single unified model of text grammar with any appreciable level of general acceptance. But their work is very important from the point of view of the questions they asked, the issues they raised, and the research interest they generated. In what follows, we shall try to deal at some length with the work of two most representative researchers in the group.

1.3.7.2. van Dijk (1972) provided the initial impetus for textlinguistic research by pointing out the need for, and the possibility of, extending the data of linguistics to

include sentence sequences. Explicitly espousing a generative semanticist position, van Dijk differentiated between 'macro-structure' - a level of deep semantic representation - and 'micro-structure' - a level of surface syntactic structure. But at least in this work, he stayed confined essentially to a classical TG position with the difference that wherever 'sentence' occurred in TG he used 'text'. The most inadequate part of van Dijk (1972) is the absence of a bridge between the semantic macro-structures and the syntactic micro-structures. Longacre (1976) observes, "From the stark basic propositional 'idea' of the text comes its full blown structure. But what lies between?" (Longacre, 1976:173). To make matters worse, van Dijk admits the possibility of "several ways of indicating" the macro-structures. One such form is a "hypothetical paraphrase" which may be "represented by a structure of intuitively verbalised propositions" (van Dijk, 1972:157). We attempt to avoid such theoretical laxity by emphasising the formalisability of the syntax of the text, i.e., the set of rules whose business it is to signal semantic (coherence) relations between the constituent sentences (propositional structures) of a text.

van Dijk's recent contributions (1977a, 1978a, 1978b) however, rise to new heights and give theoretical, empirical, and applicational reasons for doing text grammar. van Dijk (1978) is especially conscious of the need for metatheoretical elegance and thus takes steps to clarify his terms unambiguously. Thus for example, he makes a distinction between

'text' and 'discourse'. He says, "by the term 'text' I ... understand a theoretical construct ... whereas the term 'discourse' is used as an observational term" van Dijk's abiding interest, however, has been in evolving a formalism to represent the macro-structure of texts. Thus he devotes great attention to 'text-logic' and 'text-connectives' which are conceived of as belonging to the base component of a text grammar. But, since his macro-structure is equated with summary or paraphrase, there arise at least two major difficulties. The model cannot escape the charge of being partial to comprehension, and the theoretical machinery to raise the abstract macro-structures to the surface is bound to be extremely complicated. But in all fairness to him, it must be said that he is guided by general theoretical ambitions more wide-ranging than any hitherto entertained by linguists. He is interested in cognitive capacities in general and text comprehension, being part of these, cannot be studied in isolation.

1.3.7.3. Petofi's work is inspired by a desire to achieve the following aims.

"(a) Outline the framework of a general theory on the basis of a thorough analysis of the results of linguistic and logical research.

(b) Check the applicability of this general theoretical framework by analysing texts of different languages and/or grammatical/extensional semantic aspects,

(c) a continuous refinement of the theoretical framework on the basis of empirical work and the results of new theoretical research" (Petofi, 1975, reproduced on p. 10, Petofi, 1978a).

Accordingly, on his view, 'text grammar' is one of the three components of 'text theory'. The other two components are the 'lexicon' and the 'extensional (or world-semantic) component'. The theory as a whole is called a "Text-structure-world-structure-theory". In different papers he deals with these components separately (Petofi, 1976a, deals with lexicon, 1978b with text grammar). The only disturbing aspect of Petofi's work is his formidably complex formalism. The proliferation of terms is also so great that the theory's chances of a safe passage through evaluation procedure are likely to be severely jeopardised.

1.3.7.4. Though we come quite close to the continental school in the realization of the need to account for coherence, we do not share their theoretical ambition to represent all that is known to be, and can be conceived of as, relevant to text production and comprehension. We have narrowed the scope of our inquiry to the 'syntax of the text'; of course not syntax conceived of as a purely formal or autonomous component, but as the form of meaning or a theory of semantics.

There is reason also to be dissatisfied with the continental school's characterisation of the nature of the relation between sentence and text. In fact the use of the phrase "Text Vs. Sentence" (so pervasive, and even the title of a recent book) is almost unintelligible to us except as

a description of the opposition between two theoretical positions. We do not envisage any confrontation between the two. In fact we define texts in terms of sentences and their inter-relations. Their concept of sentence grammar being a part of text grammar is also difficult to understand. If what they mean is that a text grammar is a super-structure imposed on the foundation of a sentence grammar, it will be a terrible weakening of the motivation for extending the scope of linguistics. Our argument is that grammars that stay within the sentence boundary cannot even generate some sentence -types (e.g., sentences with pro-forms) in a principled manner. Textual relations have to be taken into consideration in order to ensure the proper generation of even those strings, which, according to the proponents of sentence grammars, are well-formed sentences. So, only text grammars can be the real grammars of a language. If, on the other hand, what they mean is that a text grammar 'properly includes' a sentence grammar, i.e., the terms of a grammar stating well-formedness conditions of sentences are a proper subset of the terms necessary to state the coherence conditions of a text, it is a different matter altogether. Still it is only about as significant and as obviously true as saying that a phrase grammar is properly included in a clause grammar (cf. Sanders, 1970, Section 3).

1.4. The influence of the ethnomethodological school in sociology on our thinking is quite evident throughout this thesis. Apart from the philosophically interesting equation they strike between theorising and practiced reasoning (Turner, 1974:9), the ethnomethodologists' insistence on the parallelism between the researcher and his subject (the member of a society and the abilities underlying his efficient social behaviour), is especially appealing to us as linguists. For modern linguistics also works with an analogous assumption viz., that the work of the linguist is essentially the same as that of a language learner. What impresses us most about their work is their uncompromising faith in the fact the day to day life of man is an orderly enterprise, and, conversation, being a part of this, necessarily partakes of the orderliness. This contention may at first sight appear to run counter to the linguist's supposition that linguistic performance is imperfect or degenerate. But viewed in the light of the fact that competence provides the interpretive apparatus necessary to make meaning out of performance, it is not difficult to appreciate the position of the ethnomethodologists who also believe in the intrinsic interpretive mechanism with which man makes sense out of his varied experiences. For example, Sacks and Schegloff (1974) asserts,

We have proceeded under the assumption (an assumption borne out by our research) that in so far as the materials we worked with exhibited orderliness, they did so not only to us, indeed not in the first place for us, but for the co-participants who produced them. If the materials (records of

natural conversations) were orderly, they were so because they had been methodically produced by members of the society for one another, and it was a feature of the conversations that we treated as data that they were produced so as to allow, the display by the co-participants to each other of their orderliness, and to allow the participants to display to each other, their analysis, appreciation and use of that orderliness.

By implication then, the task of the sociologist who studies conversation is to characterise 'the overall structural organization' of conversation, i.e., to identify the methods by which orderliness is effected, displayed and appreciated by the participants. No doubt the interpretive mechanism with which members effect and perceive orderliness in conversation, reconstructed from a sociological point of view, will look different from that constructed from a linguistic point of view. However, linguistics cannot afford to ignore the obligations placed upon it by a theory of cognitive social behaviour, for, at a deep level of abstraction, the task of the cognitive sociologist and the linguist can be seen to be identical, viz., that of accounting for meaningfulness or orderliness. Orderliness is thus only the sociological analogue of linguistic textual coherence, and interpretive mechanism, that of syntax of the text. The former in both cases are manifestations of, or made possible by, the latter. The ethnomethodologists' concept of 'relevance' relations between 'adjacent' elements of an activity is also reflected in our characterization of coherence as involving connection between contiguous elements. Our practice of abstracting notions from ethnomethodology and translating them into

linguistic terms is necessitated by the fact that language is just one part of the mental equipment that the ethnomethodologists are investigating in its entirety. Our abstraction and translation thus, correlate with a restriction in the scope of linguistics as opposed to the rather liberal definition of its domain by ethnomethodology. As a result, it may be safely asserted that ethnomethodology places on linguistics the obligation that the results of linguistic investigation be compatible with those of ethnomethodology. In other words, it provides a criterion of explanatory adequacy for linguistics.

1.5. Workers in cognitive science/Artificial Intelligence have for long been interested in language. Though, following early transformational generative models of language, they separated the formal properties of language from its cognitive and semantic aspects, there has been a growing trend towards seeing significance in language precisely because language is a vehicle of thought. In their opinion, the properties of language would thus cast valuable light on the properties of thought processes: again, as in the case of ethnomethodologists, a theoretical position that goes well with the goals of modern linguistics, which seeks to enhance our understanding of the structure of human mind by investigating the properties of language.

Cognitive scientists are interested in explicating the "common-sense understanding", or the system of assumptions

and knowledge that ordinary individuals use in interpreting the "motives and behaviour of themselves and others" (Schank and Abelson, 1977:4). Such interpretation depends on identifying, "the intentional and contextual connections between events, especially as they occur in human purposive action sequences" (ibid). Though, like the ethnomethodologists, the cognitive scientists are also interested in the human epistemic equipment in its entirety, it is easy to identify the implications of their work for linguistics. Thus, texts, in our opinion are paradigm examples of purposive action sequences, and research attention needs to be paid to the connections among the constituents of the sequences in order to explain how their purposiveness is made manifest. Needless to say, isolated sentences are inadequate, and would prove artificial, for the purpose of building a theory of meaning inspired by a theoretical ambition to represent the totality of knowledge structures. However, linguistics cannot hope to be able to tackle all the issues presented as falling within the purview of cognitive science. Norman (1980) alone presents the following twelve issues.

| | | | |
|----------------|-------------|------------|-------------|
| Belief systems | Emotion | Learning | Performance |
| Consciousness | Interaction | Memory | Skill |
| Development | Language | Perception | Thought |

(Norman, 1980:1-32)

It may be argued that since these are all interacting components of the human epistemological system, and since parts cannot be properly studied in isolation from the whole,

language also cannot be studied in strict separation from other subsystems like beliefs, emotions, learning etc. But we feel that a restriction of scope in linguistics is definitely warranted though the current restriction to isolated sentences has to be abandoned. For admitting the need for linguistics to be sensitive to developments in other branches of cognitive investigation is not the same thing as neutralizing the distinction between linguistics and other disciplines. We would prefer a compromise formula somewhat like the following: while linguistics is free to take its own theoretical and investigative course, its results should be integratable into or harmonious with the findings of an adequate theory of human cognitive equipment constructed by cognitive science. In other words, verbal knowledge representation must not turn out to be belonging to a system qualitatively different from, or irreconcilably discordant with, an overall knowledge representation system.

1.6. The anthropological structural analysts have studied the texts of folktales, myths, puzzles, riddles etc., in detail. They are interested in identifying abstract, invariant elements underlying different versions of the same myth, folktale etc., as well as in those conjunctions of features that any text must meet in order to qualify as a myth or folktale. Their purpose is to predict the structure of any new myth or folktale on the basis of the analysis of a finite number of myths, i.e., to characterise the notion

'a possible myth'. Variations of a myth in different cultures are also then explained as different 'transformational derivations' from one and the same deep or underlying configuration of structural elements. In spite of the remarkable closeness of these concepts to modern linguistic notions, the fact remains that the elements, categories and processes posited by the structural analysts belong to an order or level of structure different from that of purely linguistic elements. To wit, Levi-Strauss,

Whatever our ignorance of the language and the culture of the people where it originated, a myth is still felt as a myth by any reader anywhere in the world. Its substance does not tie in its style, its original music or its syntax, but in the story which it tells. Myth is language functioning on an especially high level where meaning succeeds practically at "taking off" from the linguistic ground on which it keeps on rolling (Levi-Strauss, 1966:210).

Thus, whether it is Propp's 'functions' like 'heroism', 'villainy', 'struggle' (with villainy), 'victory' (over villainy) (Propp, 1968) or Levi-Strauss's "gross constituent units" (Levi-Strauss, 1966:210) the categories of structural analysis are purely story or content oriented. Thus the term 'text' itself comes to mean not an essentially linguistic structure but a configuration of contentive categories or a version of a story or a myth.

Structuralists in literature also posit similar categories (plot, action, setting, characters, etc.) and use 'text' to denote an entire work of literature. Without trying to discount the significance and usefulness of this kind of analysis for the purposes which it is meant for, we

may assert that a linguistic study of text will have to look for and identify categories different from those used in structural analysis of literary texts. Moreover, the term text itself will have to be defined more stringently. We propose to do both in the later part of the thesis.

1.7. This survey cannot escape the charge of being subjective and non-comprehensive. Our only defence is the plea that the field is so vast and continuously growing that it is not possible to take note of all the exciting work being done in it. However, we shall endeavour to remedy the situation somewhat in our bibliography. So the non-inclusion of the work in text and related fields by the Prague School, the French Structuralists, the Russian Meaning \leftrightarrow Text Synthesis Theorists, and the notable individual efforts of Wallace Chafe, John Hinds, Susumu Kuno, Dwight Bolinger, Talmy Givon, Thomas Sebeok, Roy Freedle, Robert de Beaugrande etc. in this survey does not constitute any discounting of the importance of their work. Neither is any disrespect shown to applied linguists like Widdowson, developmental psycholinguists like Susan Ervin-Tripp and Catherine Mitchell-Kernan, stylisticians like S.R. Levin and R.A. Sayce or the Russian formalists like Bakhtin and Todorov, all of whom have, in their own ways, expressed the need for linguistics to take textual relations into consideration in order for it to be able to contribute significantly to fields like second language teaching,

language acquisition, literary interpretation etc. As for generative semanticists, we have, in the thesis, taken care to point out the conceptual suitability of their school for the construction of text theory without having to sacrifice theoretical moderation and necessary formal rigour. We have demonstrated also how at least some of our own formulations come close to, or are adaptations of, the ideas put forward by linguists like James McCawley, Jerry Morgan, Georgia Green, Robin Lakoff, Anjani Sinha and others.

Chapter 2

Philosophical and Metatheoretical Base

No Mr. Blake. We are speaking now from the psychological point of view. I do not want bare facts. I want your own selection of facts.

Hercule Poirot
Five Little Pigs

Any study by the human mind of its potential knowledge of man, or of anything else, would seem to require the assumption that beneath the obvious "great, blooming, buzzing confusion" there is some degree of uniformity, constancy, regularity, lawfulness, orderliness, continuity of process, some sense of direction or purpose, some emergence, all discovered in and through the progressive confronting of raw experience. Such an assumption of the underlying actuality of an orderliness in nature, ultimately expressible in laws or principles, enables one to say something about the way in which the various processes in the world operate both as description and as standards to be adhered to.

Ordway Tead
Toward the Knowledge of Man

2.1. In the earlier chapter we have expressed our dissatisfaction with previous attempts at text analysis. While the reasons for the dissatisfaction have been as clearly elucidated as the specific occasions demanded, a clearer exposition of the philosophical and metatheoretical inspiration behind the present study, occasioned, in part, by such dissatisfaction is called for. While we do not claim any striking or radical novelty to the views presented here, we expect them to constitute a fresh attempt at synthesising points of view expressed by different thinkers on diverse occasions, and

resolving some outstanding issues in linguistics and philosophy of language.

2.1.1. The Syntax-Semantics Dichotomy

Our characterisation of the nature of the inter-relation between syntax and semantics will proceed along the lines suggested mainly by the four following facts of recent linguistic history.

- (1) The inadequacy of fully meaning-based or content-oriented approaches to text, (e.g., the anthropological structural analysts following Propp).
- (2) The lack of any appreciable generality of linguistic statements on texts in spite of excellent insights into, and the enormous variety of, data gathered by the tagmemicists.
- (3) The refusal of the autonomous syntactic, alias interpretive semantic, school to recognize anything beyond the sentence as linguistically significant data.
- (4) The enthusiasm of the generative semanticists for text studies, and their successes in this regard.

In our attempt to account for the above facts, we seem to be forced into taking a stand on the long standing controversy about the nature of syntax-semantics interaction. We present our view straight away expecting intermediary connections to show up in course of argumentation.

2.1.2. In our conception, semantics occupies a place exactly analogous to that of phonetics with regard to linguistic theory. Both are pre-theoretical, data-level phenomena, which it is the task of linguistic theory to organize or account for. Just as phonetics represents a level composed of the endless variety of phonetic entities on which phonology (theory) imposes a form and thus makes it manageable to the language learner, semantics represents a pre-theoretical level composed of endless concepts, ideas, feelings, thoughts, emotions, allusions and references and their inter-relations on which syntax (theory) imposes a form and makes it manageable. That is to say, syntax reduces the experiential variety of the semantic mass into theoretical unity in the same way in which phonology imposes unity of structure on phonetic variety. Also, just as there is a universal phonetic inventory, there is a universal semantics, the combined encyclopaedic knowledge of the world or the common cognitive core, that any man, by virtue of being a man, comes to possess. Again, just as phonology is a set of rules whereby the speakers of a language abstract the essentials from the phonetic variety, syntax is a system of rules which the speakers of a language employ to signify essential semantic information. Without the rules of phonology, phonetics would be just a jumble of sounds; without the rules of syntax, semantics would just be a heap of words and their meanings; data without theory would just

be a mass of phenomena. Phonetics and semantics become significant only through their interaction with phonology and syntax respectively.

2.1.2.1. The analogy between phonetics and semantics is also reflected in the terminology dealing with sub-divisions in the two fields. Thus we have linguistic phonetics and linguistic semantics in contradistinction to say, acoustic phonetics and logical or philosophical semantics respectively. But we do not have linguistic phonology or linguistic syntax contrasting with any other kind of phonology or syntax. This means that both are essentially linguistic or theoretical in nature. Hence the tautological awkwardness of either or both being preceded by 'linguistic'. Linguistic phonetics deals with those aspects of phonetics that are relevant for the construction of phonological theories and linguistic semantics with those aspects of meaning or semantics that are relevant for the construction of syntactic theories. For example, how the concept of time is perceived by the speakers of a language is not directly relevant to the linguist, but how its crucial distinctions are reflected in the syntax of the language i.e., the 'tense system' of the particular language, is of enormous significance to him. Also, the linguist is not concerned with why the speakers of a language view 'moustache' as feminine and 'hair' as masculine (though an anthropologist may find the question intriguing); what the linguist investigates is whether there

are any linguistic consequences to this particular view. Linguistic consequences here mean only syntactic consequences, e.g., whether verb-subject and adjective-noun concord in that language is sensitive to gender distinctions, and if so in what ways. Rules regarding this sensitivity, and not the femininity Vs. masculinity of 'moustache' or 'hair' form part of the competence of a speaker of that language. Are these rules syntactic or semantic? They are syntactic rules in the sense that they are human inventions and not reflections of existential reality, not facts of external world but rules of a specific language designed or evolved so as to make possible communication about the myriad facts of life. That is, they are rules about the combinability or otherwise, and the ways of combination, of the semantic or meaning-bearing elements. They are abstractions, i.e., theoretical entities making reference to, but not obliged to reflect the actual nature of, reality. For example, the fact that Hindi (a specific language) is sensitive to gender distinctions of 'moustache' and 'hair', while English (another specific language) is not, is not of any consequence to the actual nature of 'moustache' or 'hair'.

2.1.2.2. A theory-data relationship is essentially one of dialectical interdependence, i.e., one in which influences and modifications work bi-directionally. Dingwall states,

One cannot devise a useful theory apart from observation of data, nor can one make fruitful observations without the guidance of some preliminary theory or hypothesis. Once a theory is established,

this reciprocal relation does not cease to exist but is maintained in the process of validation. This process may lead to the expansion, modification and even the abandonment of theories, as numerous examples in the history of science establish (Dingwall, 1966).

Now, on checking the syntax-semantic relationship against this characteristic of bi-directional dependency, we see the criterion being met. Bever (1972) has the following to say,

... Cognitive and behavioural systems constrain certain linguistic structures and ... syntactic style (personal, ethnic, and linguistic) systematically modifies certain concepts (Bever, 1972

The explanations of syntactic processes like passivization, left-dislocation, dative-movement etc. made in terms of notions like foregrounding and topicalization is an instance of the linguist's recognition of the language user's exploitation of the dialectics between syntax and semantics. These phenomena exemplify at once the grammatical determination of meaning and the semantic motivation for grammatical processes. Alston (1974) catches the essence of our argument here in the following words, "... it is the essence of linguistic structure that members of structurally different linguistic categories perform different semantic functions (that is what linguistic structure is all about)" [emphasis mine:TC].

2.1.2.3. Theories are also envisaged as intellectual tools used by man to make sense out of the jungle of phenomena that he is confronted with in the course of his life. Terms

like 'outlook on life', 'philosophy of life', 'point of view', 'value system' etc., stand for theories of varied degrees of sophistication that man employs in his encounter with experience. Scientific theories represent the paradigm cases of man's employment of his intellectual faculties to understand and interpret natural phenomena. Considered in this light also, the syntax-semantics relationship can be taken to be that between theory and data. Pinker (1979) observes,

Anderson (1974, 1975) has pointed out that semantics-based learners, including the subjects in Moeser and Bergman's studies, learn by virtue of specific assumptions they make about the way the target language uses syntactic structures to express semantic relations. For example, he notes that natural languages require an adjective to predicate something about the referent of the noun in its own noun phrase, never a noun in another noun phrase in the sentence. That is, in no natural language could a phrase such as, "the blue stripes and the red rectangle" refer to an American flag, even though the sentences of such a language might be identical to the sentences of (say) English, and the semantic relations expressible in that language might be identical to those expressible in (say) English. Anderson performed an experiment in which subjects saw strings of English words (referring to shapes, colours, and spatial relations) generated by an artificial grammar. A second group saw the same strings paired with pictures in such a way that each adjective in the sentence modified a noun in its phrase; a third group saw the same strings and pictures, but they were paired in a way that each adjective modified a noun in a different phrase (like our example with the flag). Only the second group of subjects, with the "natural semantics", were later able to discriminate grammatical from ungrammatical test strings. Thus, Anderson argues, it is not the availability of semantic information per se that facilitates syntax learning in humans, but semantic information that corresponds to the syntactic structures in the target language in some assumed way ..." (Pinker, 1979).

2.1.2.4. If, as in the descriptivist framework of philosophy of science, a theory is viewed as a summation or shorthand description of data, we may not be able to see a perfect parallelism between theory and data on the one hand and syntax and semantics on the other. However, if theories are viewed as simple, finite, and economical representations of experience, the analogy between the two sets becomes clear. In fact the terms 'finite' and 'infinite' used in that most important phrase in TGG viz., the finite set of rules that underlie the infinite variety of sentences of a natural language stand, in our opinion, for theoretical economy and experiential diversity respectively. In our conception, the infinitude of the variety i.e., the creativity of language use is reflected in the unformalisable, uncontrollable and unpredictable nature of the thoughts, concepts, emotions - in fact the entire range of cognitive phenomena - that are expressed and expressible in any ordinary human language. It is not the structural or syntactic differences among the utterances made possible by transformational rules that alone are responsible for this variety. Variety and novelty are facts of semantics and have to be accounted for in terms of syntax i.e., in terms of a limited set of terms and rules. It is a fact that nothing more than recording or photographic reproduction can be achieved by any theory that seeks to stay within the level of data itself. The failure of the Propopian school of structural analysts to arrive at anything more than generalizations limited to reified narrative forms like folk

and fairy tales, myths and puzzles, has to be understood in this light. Propp and his followers devoted their attention only to categories like event, episode, setting, and participants discernible in a variety of these conventional forms, without any regard to the linguistic structural aspects common to them. Thus, in spite of the fact that their objects of study were texts, the structural analysts' contribution to the understanding of text structure is of limited linguistic interest.

2.1.2.5. Other attempts at constructing semantic theories staying within the limits of semantics soon slide into arguments over ontology, naming, intensional and extensional reference, propriety Vs. impropriety of descriptions etc. These are all interesting and significant issues in the philosophy of logic, but the linguistic relevance of these notions and rules formulated in terms of them is suspect. These notions do not throw any light on the way ordinary native speakers handle the world of their ideas through their language. This, essentially, is the spirit of the criticism advanced by Weinreich (1963). He says, "The most important works on semantics are on the whole preoccupied with the one semiotic process of naming: i.e., with the use of designators in theoretical isolation: they pay little attention to the combinatory semiotics of connected discourse". Leech, writing six years after Weinreich, observes, "His (Weinreich's) complaint about the fragmentary nature of

semantic knowledge ... remains valid The relation between lexical meanings and the meaning of whole sentences and discourses has been only tentatively explored" (Leech, 1969:3). Katz and Fodor (1963) is an attempt at formulating a semantic theory with no recourse to syntax or any other level. All that they succeed in achieving is a quasi-formal notation for dictionary entries and not any significant generalization or rules about how semantic facts are handled by language users.

Thus, Alston (1974), after an elaborate review of the work of philosophers, and semanticists among linguists, like Schlick, Strawson, Ryle, Carnap, Katz, and Searle, comes to the conclusion that, so far, nobody has been able to formulate 'semantic rules' in any interesting sense of the term. Though it is a widely held notion that the meaning of a word or expression is a matter of the conventions or rules regarding its use, there is no uniformity of opinion as to what form these rules have or in which way they are represented in language. Our contention is that search for semantic 'rules' will continue to be frustrated as long as semanticists refuse to step outside semantics i.e., from the realm of reference to that of predication. For it is only descriptions of individual word-meanings and not generalizations that can be captured by a purely semantics-bound theory of meaning. Whorf understood the real nature of the realm in which linguistically significant semantic rules are to be sought. He says,

Sentences, not words, are the essence of speech just as equations and functions, and not bare numbers, are the real meat of mathematics... Reference of words is at the mercy of the sentences and grammatical patterns in which they occur (Whorf, 1956).

The work of philosophers and their slant towards pure meaning are understandable in a way the attempts of linguists to construct semantic theories in isolation from syntax are not, since they should be aware of the constant interplay between syntax and semantics. The psychologists seem to have done better in this regard. Thus Ausubel writes,

Linguistically speaking, grammar consists in large part of the particular set of rules that are generally accepted by the users of a language for inflecting words and combining them into sentences. From a psychological standpoint, however, such rules primarily serve the transactional function of bringing ideas into relationship with each other in a reliable and generally understood way. Hence, when a group of words are appropriately inflected and combined according to the designated rules, the resulting sequence is not only grammatically correct, but also communicates the speaker's or writer's intended propositional meaning. Typically, therefore, a given word in a sentence both conveys a distinctive denotative meaning, and, by virtue of its particular syntactic function in the sentence, furnishes additional semantic information that contributes to the generation of propositional meaning. As a matter of fact, one often needs to know the syntactic function of a word before its denotative meaning can be apprehended (as in the case of homophones or certain words that serve as both nouns and verbs)" (Ausubel, 1966).

2.1.3. Mercifully enough, the number of linguists trying to theorise about semantics in isolation from syntax is very few. This is not the case with those who seek to account for syntactic phenomena in terms purportedly purged of

well-known school of linguistics towards the desirability of keeping semantics away from syntactic theory construction has earned the sobriquet 'autonomous syntax' for their school. In our formulation, however, it makes no sense to speak of either syntax or semantics being autonomous. For, if the two are supposed to stand in a relationship of mutual dependency, the question of autonomy just does not arise. Our claim is thus strengthened to the effect that there has been no purely autonomous syntactic theory right from the traditionalist through the structuralist and autonomous syntactic schools. That is to say, in spite of all the dress restrictions designed with a view to keeping out meaning from the region of grammatical inquiry, it has always managed to get in somehow or other. For example, to define a noun either as the 'name of a person, place or thing' or in terms of relational notions like 'subject of' and 'object of' is to define it in functional, i.e., semantic terms. Purely formal devices of NP definition like distribution in sentences and submission to transformational operations like clefting, pseudo-clefting and passivization also can be seen to hinge ultimately on semantic notions. Considered as formal syntactic means not tinged at all with semantic or functional information, distribution and transformations cannot escape being highly language specific, or compelled to let semantic information come in through the backdoor, or both. Thus autonomous syntax is a castle built on the myth of pure form and can be

defended only by argumentation that tends to wither at the very approach of close scrutiny. For example, take the following statement by Jackendoff,

... co-reference is an exclusively semantic property that cannot be referred to by transformations. Second, co-reference is an aspect of semantic interpretation that has nothing to do with the functional structure of the sentence" (Jackendoff, 1972:111).

Needless to say, the assertions here militate violently against well-known formulations of transformations like reflexivization and pronominalization made within the framework of autonomous syntax itself. Such inconsistency is a direct result of the rigid compartmentalization of syntax and semantics, coupled with the closing down of corridors between the two, insisted upon by theorists like Jackendoff.

2.1.4.1. The false hopes of being able to do syntax with no reference to meaning, as well as the allegations that some people were doing so, were both occasioned by an inability to see the actual theory-data relation between syntax and semantics. In the feud between the interpretive and the generative semantic schools, the arguments over the nature of the relation between the two took on a sophisticated form. The latter conceived of semantics as necessarily interlarded with syntax, thus necessitating an obliteration of the boundary between the two. The generative semantic concept of pre-lexical transformations constitutes a refutation of the contention that syntax and semantics are discrete, independent and self-sufficient levels of analysis. Yet even

they failed to explicitly recognise the relation of dialectical inter-dependence between syntax and semantics. Still, generative semantics scores over autonomous syntax in that their enthusiasm for semantics does not amount to discounting the importance of syntax. The autonomous syntactic school, on the other hand, argued themselves into a corner where their theoretical attitude towards syntax leads to an asymmetrical treatment of semantics and syntax on the one hand and phonetics and phonology on the other. Generative semantics is free from this lopsidedness precisely because they do not grant autonomy to any component of grammar, not even to semantics.

2.1.4.2. Chomsky's contention that generative semantics is a notational variant of Standard Theory can be given a new interpretation in terms of our conception of the syntax-semantics relationship. Thus we claim that, because of the inherent incapability of any linguistic theory to formalise syntax with no help from semantics, the autonomous syntacticians had all along used semantic information, however, unconsciously, in their syntactic theory construction. The incorporation of selectional restrictions into the grammatical machinery of Standard Theory is probably the best instance of this practice. That is to say, in spite of all theoretical professions as to the purely formal nature of syntax, autonomous syntax has had to resort to the kind of semantic relations that the generative semanticists insisted, should taken note of. For example McCawley (1976) observes,

... unless one is to restrict the domain of syntax so that it does not include modificational relations, which have traditionally been taken without question as within the domain of syntax, one must give up any boundary between syntax and semantics (McCawley, 1976:298).

McCawley's argument is that in so far as syntax has concerned itself with modificational relations,¹ it has entered the semantic ground and, doing so and claiming syntax to be autonomous in the same breath is nothing short of a contradiction. Thus, autonomous syntax has all along failed to demonstrate the autonomy of syntax. So, the branding of generative semantics as a notational variant of autonomous syntax means that the former has removed the contradiction inherent in the latter. To admit that both were doing the same thing and differed only in what they called themselves is to lead to the conclusion that one set of terms is empirically indistinguishable from the other i.e., both sets fit facts of data equally well. If this be the case, evaluation can be done only on the basis of which terms exhibit greater fit between the theorists' profession and their practice. Such an evaluation measure will favour generative semantics, because this school accords explicit theoretical recognition

¹By 'modificational relations', McCawley means relations of the type that obtain in sentences like the following.

The Sheriff jailed Robin Hood for four years.

A theory of grammar has to determine whether the adverbial expression 'for four years' modifies the verb 'jailed' or a deceased underlying clause 'Robin Hood be in jail', of which 'jailed' is the remains.

to the relevance of semantic information in the study of syntax while the autonomous theoreticians use such information without explicitly recognising its relevance. In other words, the notational variation of generative semantics from autonomous syntax is an improvement on the latter. It is essentially the very same feelings that have prompted Hawkins (1978) to call generative semantics a "development of Standard Theory". He goes on to amplify the stand thus,

... Generative Semantics, despite its name is essentially a syntactic theory. It investigates how semantic considerations contribute to the syntactic task of predicting well-formedness, and conversely, how independently motivated syntactic rules can predict which meanings can be assigned to which surface sentences. It makes the very strong claim that all semantic rules pairing meanings with actual surface sentences are simultaneously syntactic rules, since they are required in the prediction of well-formedness. As such it is a theory which asserts the relevance of all semantic rules in syntax, hence semantic-syntax (Hawkins, 1978:32).

The advantage of the generative semanticists is that they do not persist with a theoretical belief in something that they cannot practically demonstrate viz., the autonomous character of syntax. They do not mind their enterprise being called 'abstract syntax' or 'semantax' so long as their theoretical claim about the indispensibility of semantic information for syntactic description is recognized.

2.1.5. However insightful and correct as far as they want the investigations of generative semanticists into the syntax-semantics relationship were, they nevertheless granted only a one-sided dependence of syntax on semantics (i.e., the

relevance of semantics for syntactic theory construction) and not mutual inter-dependence between the two. We insist on viewing the relationship between syntax and semantics as bi-directional. Such a view, which posits a theory-data relation between them, has the obvious implication that, while it is not difficult to envisage syntax and semantics as two logically distinct categories, it nevertheless makes no sense to treat them as mutually independent or autonomous. Divorced from the other, neither can save itself from absolute vacuity or total intractability. They are in such constant dialectics that it would be a violence to their nature to try to drive a linguistic analytical wedge between the two. In fact, that even the autonomous syntacticians have not been able to purge their theory of semantics, or, equivalently, the fact that generative semantics is a notational variant of autonomous syntax, is testimony to the inviolable nature of this relationship.

2.2. Many ideas common to linguists of various theoretical persuasions become especially interesting when viewed in the light of the contention that syntax is a theory of semantics just as phonology is a theory of phonetics. In this section we shall examine some of the common ideas in this way.

2.2.1. All linguists and linguistic theories agree on one point viz., that grammar is a means or mechanism for effecting sound-meaning correlations. Sound and sense are the substances, universal, undifferentiated except for gross units and chunks;

and language is the result of imposing 'form' on these substances. These forms are phonology and syntax. The two together straddle the seemingly mysterious gulf between perception and knowledge, knowledge and action, or performance and competence. They provide the rules for the representation of knowledge as well as rules for the correspondence between knowledge and reality. That is to say, perceptual data or utterances heard as strings of speech sounds or phones are processed into a phonemic or ideal representation, and translated into lexical items with associated phonological descriptions. It is these ideal entities, which are interpreted, in speech production, into phonetic and semantic or meaning bearing elements. Thus what lies in between the levels of interpretation¹ turns out to be the level of theoretical terms. This is the syntactic level. The acoustic variety of the phones, the semantic variety of utterances and the manageability of both sound and meaning can all be accounted for only in terms of a finite phonemic system and a finite system of structural rules, respectively.

2.2.2. The claim that syntax is a theory of semantics receives further support from the practices of linguistic analysis and explanation of linguistic phenomena by transformational grammarians of all description. For example, their

¹ 'Interpretation' here has to be taken only in the logical or metatheoretical sense of the term viz., instantiation or substitution of theoretical terms with terms referring to data.

ⁿ
explanation of where noun phrases come from posits a kind of underlying structures which have undergone theoretical or metalevel reduction before they emerge on the surfaces as a specific syntactic category. Thus an NP with the constituent structure Adj+N is analysed as the product of an underlying relative clause, "the N that is Adj"; an NP with the structure N_i 's + N_j is derived from " N_i have N_j ". Such syntactic processes underlying syntactic categories are a testimony to the theoretical nature of syntax. It means that independently motivated transformations like relative clause reduction discovered by linguists are at work in the unconscious acquisition of the structure of NP's by language learners. This kind of syntactic analysis constitutes a hypothesis to the effect that the structure of an [Adj + N] NP reflects the semantic fact that it is the attribution or predication of a quality to some or other object; which fact also finds alternate expression in the structure "N is Adj". Thus two syntactic structures refer to the same cognitive content and the commonness of this content is accounted for by the reducibility of one structure to the other by means of rules established for different purposes. Such correspondences also indicate that predication is essentially propositional or sentential in nature and a sentence is a structure imposed on some substance, a form of some content, or a form-meaning composite. Thus no theory of structure that refuses to recognise the validity of substance, and no theory of meaning which does not enter predicational grounds, can hope to

reach linguistically significant generalizations. Language is born out of, and maintained by, the constant dialectics of form and content, or syntax and semantics.

2.2.3. The celebrated parallelism between the linguist and the language learner, and consequently between linguistic theory and language acquisition process, and between language and the linguist's description of it, becomes especially interesting when the theory-data relationship between syntax and semantics is explicitly recognised. The parallelism clearly suggests that what the linguist does with the language he studies is a conscious replication of what the language learner does unconsciously, viz., identification of the optimal grammar that will account for the data that confront them both. These data come to them in the form of sounds in sequence which they have to analyse into strings of formatives, and the meanings they have to encode into grammatical formatives. So linguistic theory or competence i.e., the result of the task of the linguist and the language learner, respectively, becomes identical with a system of rules regarding the speech sounds (phonology) and a system of rules regarding meaning-structuring (syntax). Carrying the analogy further, we may characterise competence as a theory of performance.

Competence is here understood as an epistemic system or knowledge structure with the help of which human beings

generate and interpret experience or performance.¹ Of course it is not considered a purely abstract structure sufficient unto itself and unrelated to performance, but as regulating and being regulated by performance. Unless the dialectics of this relationship is taken into account, competence will have to be, most uncharitably, envisaged as a static, reified system, instead of the dynamic one it really is. Even as purely theoretical terms, both 'competence' and 'performance' derive their intelligibility solely from each other. The Chomskyan concept of competence as an abstract idealised structure would be deprived of all its interest if isolated from the theoretical purpose of explaining "the creative aspect of language use", i.e., performance. Moreover, the fact that competence is necessarily abstract or that it is not directly reflected in performance, does not conflict with our contention here. Our argument is only that they empirically real (psychological) principles of organization that constitute competence are functionally or teleologically related to experience. That is to say, they are actually used in or are necessary for the explanation of, man's understanding or identification of what Whitehead called the "uniformity of the texture of experience". Whitehead says,

¹ Though 'competence' and 'experience/performance' may, without damage to our position, be taken in the sense in which a cognitive scientists and ethnomethodologists use the terms, what is meant here is only linguistic competence and linguistic experience/performance.

... this uniformity does not belong to the immediate relations of the crude data of experience but is the result of substituting for them more refined logical entities, such as relations between relations, or classes of relations, or classes of classes of relations" (Whitehead, 1966:11-12).

These 'refined logical entities' and the substitution of the 'immediate relations of the crude data of experience' with them are, on our view, theoretical terms and theory construction respectively. These, together, are responsible for the meaningfulness of experience, which, deprived of these mental abilities of the experiencer, cannot but be disjointed. Hence our claim that competence is a theory of performance, i.e., it is the level at which method underlying the madness is perceived and understood. It is this need for the active interpretation or reconstruction of reality by man that is underscored by William James in the following words,

The world's contents are given to each of us, in order so foreign to our subjective interests that we can hardly by an effort of the imagination picture to ourselves what it is like. We have to break that order altogether — and by picking out from it the items which concern us, and connecting them with others far away, which we say, belong with them, we are able to make our definite threads of sequence and tendency (James, 1966:7-8).

On our view, then, the best justification for a distinction between competence and performance issues from the nature of the interrelation between the two. The linguist and the language user employ 'a model of competence' and 'competence' **in order to** explain and make sense out of the data that confront them. Linguistic competence and linguistic theory then come to share the common characteristic

of being essentially human constructs designed to answer the practical need of understanding performance and the theoretical need of understanding the process of understanding, respectively. Schutz (1953) recognizes the necessarily metascientific nature of theory construction in the sciences of man. He observes,

The thought objects constructed by the social scientist refer to, and are founded upon, the thought object constructed by ... man Thus, the constructs used by the social scientist are, so to speak, constructs of the second degree, constructs of the constructs made by the actors on the social scene, whose behaviour the social scientist observes and tries to explain in accordance with the procedural rules of his science (Schutz, 1953).

What we have tried to establish is a parallelism between syntax and competence on the one hand and semantics and performance on the other. The former are finite and have to be understood as formalizations of the latter. A theory-data relation is posited between the two sets as a consequence of the realization that the infinite variety of the latter cannot be understood, explained, or accounted for by the linguist, or acquired and managed by the language user, except in terms of the former.

2.3.1. Arguments based on the conception of a theory-data relation between syntax and semantics and on the analogy between the linguist and the language learner have implications for explicating the notions, 'linguistically significant fact' and 'idealisation in linguistics', or 'delimitation of linguistic data'. In so far as theory construction

essentially involves a recognition of what is relevant, syntax as a theory of semantics involves a selection of semantic facts that are relevant for the purpose of formulating generalisations. The standard Theory concept of selectional restrictions, and the generative semanticists' concept of semantic primitives on the one hand, and the cognitive scientists' 'primitive acts of conceptual dependency' on the other, are instances of semantic information which is of central as against peripheral linguistic significance. That is to say, the former are necessary to state well-formedness conditions on linguistic strings, and the latter are useful in the representation of knowledge in totality, of which linguistic knowledge forms a part (see Schank, 1972). On our view, such linguistically significant semantic features are identified in a way analogous to the delimitation of its data by a theory. In other words, syntax makes a theoretical selection from a variety of semantic facts. This is why languages differ as to the syntactic consequence of semantic features and relations. Thus the semantic notion of sex may have syntactic sensitivity in the form of gender in one language while another language may not show any such sensitivity. Of course there will be semantic features that have universal syntactic consequence. Animateness and inanimateness are probably strong contenders for the candidacy of such universal features. Thus, for example, a sentence like "All rocks died yesterday" would be unacceptable in any language, while correct gender attribution to objects may or

may not be a factor affecting grammaticality across languages. The apparent conflict between universality and specificity of language can be resolved in terms of the theoretical nature of syntax and the experiential nature of semantics. Thus to claim universality in semantics or data-level phenomena is at best vacuous. A claim for syntactic universals, on the other hand, will involve an empirical hypothesis about the epistemological processes of theory construction that hold good for human beings in general. On this view, each language can be seen to be at once constrained and facilitated by the same theory construction capacity. Universal grammar, in this light, becomes a characterisation of the innate structures and inborn expectations, which, in general linguistic theory, are reflected as constraints on grammars. Syntactic universals, in other words, will not be a mere inventory of grammatical processes common to a number of languages. They are statements about knowledge structures and the processes that these structures are capable of.

2.3.2. A recognition of the selection of semantic features with syntactic consequences in the construction or evolution of syntactic theories leads to the conclusion that the process of idealization of data is a natural necessity in theory construction. This idealization is reflected in the process of filtering out the accidental from the essential at both the phylogenetic level of evolution and the ontogenetic level of acquisition of language.

Philosophers from Aristotle to John Dewey, C.I. Lewis and I.M. Copi have recognised the importance of this human capacity for filtering and have related it to the formation as well as obsolescence of vocabulary items in individual languages. The Sapir-Whorf Relativity Hypothesis is nothing but a statement of the same idea in terms of anthropological linguistics. What is essential and what accidental varies from culture to culture, and, at a lower level of generality, from individual to individual, or, for the same individual, from time to time. And just as the cultural behaviour of a particular community may be viewed as governed by a general conceptual system that makes the essential-accidental distinctions, the language of a particular community can be seen to be governed by a theory that makes the linguistically essential-accidental distinction within this general conceptual system. The characteristics of things that interest language i.e., the distinctions selected as essential for communication by a speech community are not, and need not be, the same as the ones that interest any other conceptual system like science, common sense, or religion. In fact, sciences may consider as accidental properties that are essential in language and vice versa. Copi (1977) writes,

These determining interests are not scientific, for as Locke observed, '... languages, in all countries, have been established long before sciences'. The situation is rather that the terms of ordinary discourse '... have for the most part, in all languages, received their birth and signification from ignorant and illiterate people ...' And for the purposes or

interests of those practical people, the properties selected by them as essential to the objects they deal with are adequate enough (Copi, 1977).

What psychologists of learning and cognition (e.g., Freedle, 1972; Olson, 1970) mean by 'minimum feature usage hypothesis' or 'minimum redundancy hypothesis' is also essentially the same human tendency or ability to weed out what is irrelevant or redundant in knowledge acquisition.

Instances, examples and supportive evidence could be multiplied, but we consider the point established clearly that language evolution and acquisition are eloquent testimonies to the theory-making capacity of man and that, underlying this capacity is the ability to discern and discard what is irrelevant for the purpose at hand.

2.3.3. The analogy between language acquisition and linguistic theory construction provides the necessary connection between the argument that syntax is a theory of semantics and the one that the methodological necessity of delimitation of data is a natural requirement on all attempts at theory construction. Just as syntax is sensitive to not all but only a selection of available semantic features, the linguist and the language learner also base their theory on selections from data. Thus the delimitation of data by linguistic theory comes to mean nothing more than a reflection of the human talent and tendency for idealisation. So, as Chomsky has said on so many occasions, idealization is a methodological imperative (see especially Sol Saporta's interview with Chomsky in *Linguistic Analysis*, Vol. 4, No. 4, 1978).

But, whereas the child as language learner has psycho-genetically determined abilities that ensure that his delimitation will be ideal, the linguist, as a conscious investigator, is handicapped by his general theoretical predilections and biases as to what aspects of data are essential and what accidental. It is not a matter of surprise then, that linguistic theories differ from one another in terms of their differing perceptions of the linguistic significance of phenomena associated with language. Thus, for example, the descriptivist/structuralist theories of language viewed the distributional properties of form classes as forming the essence of language. With the 'Gestalt Switch' effected by the Chomskyan revolution, the creative aspect of language use became the most essentially interesting aspect of language. For the communicative competence theorists, or sociolinguists, it is the communicative function of language and the variations introduced by socio-cultural, situational and interactional etc. factors which are of essential significance. For Halliday, 'the text-creating function' is the essential function of language.

Each of the above or other similar definitions of linguistically significant data implies at once an inclusion of relevant data within the purview of linguistics as well as an exclusion or idealizing away of facts irrelevant from the point of view of the theory. The inevitability of idealization as well as the tricky nature of it is hinted at by Chomsky (1977) in the following manner.

Opposition to idealization is simply opposition to rationality. It amounts to nothing more than an insistence that we shall not have meaningful intellectual work When you work within some idealization, perhaps you overlook something which is terribly important. That is a contingency of rational inquiry that has always been understood. One must not be too worried about it (Chomsky, 1977).

2.3.4. We find it impossible to disagree with Chomsky in principle; but when the importance of something which is overlooked is so great that overlooking it is not justified by calling it "a contingency of rational inquiry", we have to look elsewhere for guidelines. As for rationality, we find Feyerabend's reconstruction of Lakatos's concept of 'reason' extremely useful in this case. He writes, '... if reason is to have a point of attack in our real world with its complex episodes and its hair-raising ideas and institutions, then it must have some sophistication; it must not be less complex and less cunning than the theories it is supposed to evaluate; on the other hand, it must not be too severe, or the attempt to improve science will lead to the elimination of science" (Feyerabend, 1974).

And as for idealization in linguistics itself, Hilary Putnam's recommendation seems to be eminently desirable. He says: "I shall assume here that some degree of idealization is inevitable in linguistic work, and I shall also assume that the question of how much idealization is legitimate is one that has no general answer. What one has to answer in a specific case is whether the idealizations made by a

particular linguist in a particular context were or were not too severe" (Putnam, 1974).

Our contention is that the kind of idealization insisted on by TGG has been too severe. As a result, there crept into the grammar arbitrary and unprincipled practices of analysis and explanation. Moreover, the theory had to strike an imperious pose to refuse recognition to recalcitrant data, often earning opprobrium from commonsense grammarians on account of such tactics. Thus for example, Bolinger sees in Lees (1960), "a certain proneness to skimp the specimen-gathering phase of our science and to base generalisations on insufficient data" (Bolinger, 1961).

Besides this, linguists brought up within the transformational fold have themselves expressed their resentment over the severe restriction of scope that characterises TGG. Acutely aware of the methodological indispensibility of idealization, they nevertheless seek a relaxation of the restraint as is currently placed on TG theory. J.T. Grinder expresses the feelings of the growing community of such transformationalists in the following words:

When I create a model of my experience, I first isolate some area of my experience. I then focus on certain parameters of that area of my experience and ignore others. Models are punctuations of my experience. My activity (modelling) both clarifies my experience and impoverishes it. Theories are shared models. Using the theory of transformational grammar, I clarify a portion of my experience and other parameters within the portion of my experience I am examining. I find the punctuation that transformational grammar introduces on my experience too narrow: I want to see a model for a larger cut which

would include cognitive functioning (...) and a theory of action (...) as well as the inclusion in linguistics of certain parameters that have been ignored I suspect that much of the dissatisfaction that I see and hear from other human beings who come into contact with transformational linguistics is because they too find the cut too narrow or the model too impoverished (Grinder, 1976).

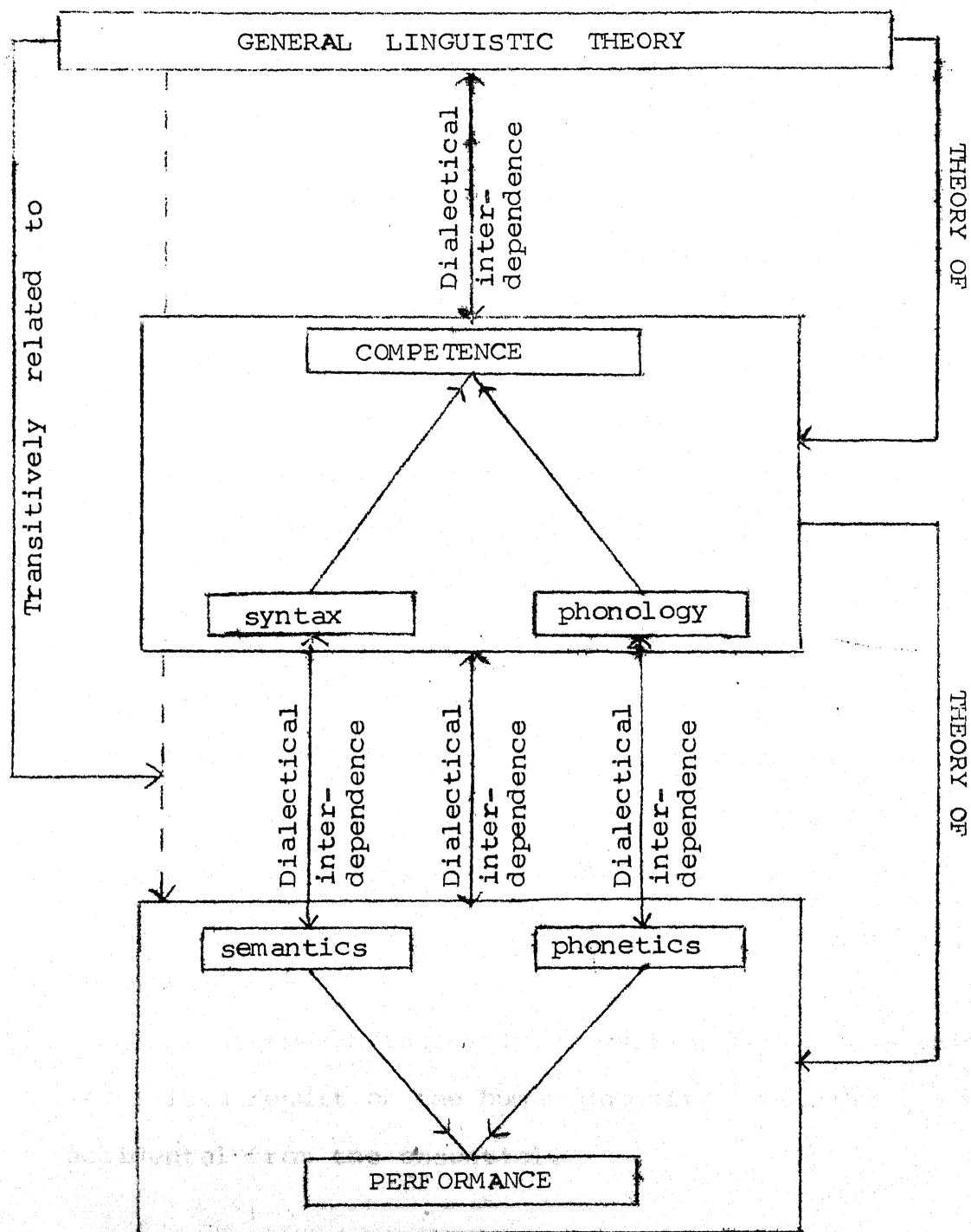
Talmy Givon, another transformationalist by training, expresses his dissatisfaction with the severe idealization insisted on by TGG in the following words: ".... One of the most damaging practices in the history of linguistics has been the arbitrary and a priori delimitation of the data base, i.e., the range of facts to serve as input for the investigation and, ultimately, as input for building the theory (Givon, 1979).

The upshot of our criticism of the brand of idealization adhered to by TGG is that a purely methodological consideration has been raised to the level of a constraint on the theory itself. Thus idealization, which should have been considered only as an aid to achieve the theoretical ends of depth of insight and explanation has actually been **idolized** into a God who has to be propitiated at any cost, even at that of depth of insight and explanation. Questioning the propriety of such mixed priorities or misplaced emphases has often been mistaken by TG theorists as questioning idealization. Thus, while appearing to agree that legitimacy or otherwise of idealization is to be judged only by the success or otherwise of the results, Chomsky, in the following passage, indulges in such shadow boxing.

There are no simple criteria that provide the correct idealization, unless it is the criterion of obtaining meaningful results. If you obtain good results, then you have reason to believe that you are not far from a good idealization. If you obtain better results by changing your point of view, then you have improved your idealization. There is a constant interaction between the definition of the domain of research and the discovery of significant principles. To reject idealization is puerile, it is particularly strange to hear such criticism from the left. Marxist political economy furnishes a classic and familiar example with its idealizations and its far-reaching abstractions (Chomsky, 1977).

2.3.5. No doubt mere accumulation of data is not an end in itself. But data must be large enough to ensure that a generalization made within the theory is not refuted by an example encountered at random. Moreover, a theory should have the resilience to redefine its data, i.e., to expand its scope when faced with the situation that, unless it did so, it would have no means of accounting for even what it had originally included in its purview. Moreover, phenomena within the delimited range may themselves take on a new significance and meaning and may suggest more insightful explanations when viewed from a larger perspective. Thus, for example, pronominal anaphora, definitivization of NP, presupposition, ellipsis, and passivization -- to name only a few -- are phenomena that exhibit greater generality and can be explained in more a principled manner within the framework of text theory than within that of any sentence grammar. Thus there is no logical alternative for a theory, pressed by data from all sides and compelled by reasons of explanatory adequacy, to agreeing to revise its definition of data and enlarge its scope.

2.4. For the purposes of greater clarity, we present our conception of language in relation to linguistic theory diagrammatically.



The diagram visualises the relation between theory and data as one of dialectical interdependence. It further posits such a relationship between (1) syntax and semantics, (2) phonology and phonetics, (3) competence and performance, (4) general linguistic theory and competence. Though it envisages competence i.e., a developmentally or ontogenetically arrived-at theory, as the direct data of linguistic theory, it also shows up the impossibility of linguistic theory being insensitive to performance. It is transitively related to performance. In other words, it is a claim to the effect that the road to competence lies through performance. By positing a theory-data relationship between the dichotomies listed above, it emphasises at once the possibility of their being logically distinct categories and the impossibility of studying either in complete isolation from the other.

The arguments upto this point can be summarized in the following way:

1. Syntax and semantics stand in a theory-data relationship. So neither pure syntax nor pure semantics can lead to linguistically significant generalizations.
2. The theoretical level of syntax makes a selection of semantic facts.
3. Language at the phylogenetic as well as the ontogenetic level is a result of the human capacity to filter out the accidental from the essential.

4. In so far as the linguist's task is a replication of the language learner's task, given 3 above, idealization or delimitation of data is methodologically inevitable.
5. Unlike the language learner, the linguist has no innately determined capacities to achieve both necessary and sufficient degree of idealization. So linguistic theory must be perpetually ready to redefine its data when faced with sufficient data pressures.

2.5. Now we believe we are in a position to account for the four instances in linguistics that we referred to in Section 2.1.1.

Thus the impossibility of pure observation or data i.e., the vacuity of an enterprise that seeks to construct valid generalizations about the data-level phenomenon of meaning without having to step into the realm of syntactic structure accounts for the limitations of the structural analysts' studies of texts (Instance No. 1).

The absence of a concern for the principle of idealization is responsible for the fact that the tagmemicists have not been able to match the breadth and coverage of their data-gathering, with a proportionate depth of analysis and explanation (Instance No. 2).

Autonomous syntax is easily seen to be based on a contradiction, one born out of a theoretical credo about the independence of syntax from semantics and the practical impossibility of keeping semantics away in syntactic analysis.

Generative semantics clears this contradiction by explicitly recognizing the dependence of syntax on semantics, or by conceiving of the two as mutually interlarded.

Besides, autonomous syntax theoreticians insist on an idealization / delimitation of data that is so severe as to create a feeling of constriction in a number of people including some who originally subscribed to their views. Once again, the generative semanticists score over the others in that they replace the blind reliance on the methodological device of idealization with the notion of 'linguistically significant generalization', (McCawley, 1979b: 204-216), used as a criterion in the evaluation of theory. On their view, a theory will be judged not on the basis of the degree of severity of the idealization that necessarily precedes its construction, but on the basis of the degree of linguistic significance of its generalizations. So long as autonomous syntax remains rigid on its stand of idealization for its own sake, it cannot afford to accord any explicit recognition to textual phenomena. Generative semanticists recognize the others' fetish for idealization for what it is viz., a methodological aid which has undeservedly graduated into a theoretical constraint, and puts it in its proper place; hence their interest in, success with, and suitability for, explaining text-bound processes (Instances 3 and 4).

2.6. The dissatisfaction we have expressed with the brand of idealization advocated by autonomous syntax, and our characterisation of syntax as a theory of semantics places on us the onus of defining and defending our conception of the data of linguistics. Thus, we replace the narrow concern of linguistics for the notion 'the correct sentence of L', with a concern to explicate 'textual coherence'. And, since coherence is a fact of communication i.e., a fact of data or of semantics, it cannot be explained or accounted for in terms of purely semantic notions, so we seek to account for it in terms of 'cohesion', which is necessarily a theoretical, structural or syntactic notion. Alternatively, we describe the task of linguistics as that of specifying the 'syntax of the text' i.e., identifying the mechanisms of cohesion which makes coherence possible.

Evidently, such a redefinition of data entails a responsibility to refine and enrich existing theoretical machinery; and such enrichments will have to be shown to be strongly motivated by significant empirical facts and gains in explanatory power. We seek to do both in the next two chapters.

Chapter 3

A Tentative Model of an Enriched PS Component of English

Sure, He that made us with such large
discourse,
Looking before and after, gave us not
That capability and godlike reason
To fust in us unused

HAMLET. Act IV Scene IV

In Chapter II we presented our view that semantics forms the ultimate data base of linguistic theory, the latter being transitively related to the former through syntax which is conceived of as a theory of semantics constructed by every speech community and acquired by every speaker. Thus we assert the centrality of syntax without granting it, in fact establishing the impossibility of its, autonomy. Hence our dissatisfaction with purely semantics-oriented studies of texts, as well as with the purely distributional analysis of discourse in the Harrisian framework. Autonomous syntax is also ruled out as a framework within which to study texts. So it falls to the lot of a theory of generative text grammars to explicate the 'syntax of the text'.

3.1. Definition 1. Syntax of the text

Syntax of the text is what textual coherence is a function of.

3.1.1. Our characterisation of the syntax of the text rests on the assumption that conceptual coherence is a defining characteristic of texts in general. Thus our theory uses coherence as an intuitive notion, a term used in the very definition of our data. The definition entails a specification of the task of linguistics as accounting for 'coherence' in terms of 'cohesion' - through a specification of the syntactic signals of the semantic phenomenon. A generative text grammar has thus to formalise the finite set of rules that makes coherence possible. In keeping with our impulse for liberating linguistics from the narrow confines of sentential phenomena, we replace classical TG's concern for grammaticality, with that for coherence. Coherence is a more inclusive notion than grammaticality, involving, as it does, both grammaticality and acceptability. Our insistence on calling the rules governing coherence 'syntactic' reflects only our faith in the formalisability of the relations of coherence holding across sentence boundaries as well as within sentences; it does not reflect a prejudice against semantics but an assertion that semantics is the very stuff that syntax is made of. It could as well have been called the 'semantax of the text'.

3.1.2. Our use of the term 'syntax' must also be understood in the context of our earlier contention that purely content-oriented approaches to the study of texts, in

principle cannot, and in practice have not, come up with significant generalisations about natural language communication. Thus, in contrast to establishing categories like participant, action, setting, event etc., which hold good only for conventionalised narrative structures, a generative theory of text grammar has to state rules valid for any instance of coherent communication. An implication of this line of argument is that a generative text grammar is capable of formally specifying the parameters of textual coherence i.e., of indicating the inter-relations among the constituent elements of texts. We see no reason to shy away from the responsibility induced by such an implication and shall immediately proceed to suggest, however tentatively, how text theory proposes to deal with this responsibility.

3.1.3. One or two words about our use of the term 'coherence' will be in order before we address ourselves to the task referred to above. Coherence is conceived of as a defining characteristic of communication, a fact of linguistic data, a linguistic reflection of a fundamental human drive to remain consistent and meaningful in one's own actions and to see consistency and meaningfulness in the actions of others. Hence our treatment of it as an intuitive notion to be explicated in terms of 'cohesion' i.e., linguistic theoretical constructs.

3.1.4. The terms 'cohesion' and 'coherence' have any significance only in a domain of grammar larger than a single simple sentence. Our next definition relates to that linguistic domain.

Definition 2. Text

A 'text' is a system of sentences.¹

Definition 3. Sentence

A 'sentence' is a simple argument-predicate relationship.

3.1.4.1. Our definition of 'sentence', it may be noted, is quite close to the logicians' notion of 'proposition' (Pitcher, 1968), to the Port Royal Grammarians' concept of 'Juger' or 'judgement' (the second operation of the mind), (Rieux and Rollin, 1975), as well as to Bever, Lackner and Kirk's notion of 'underlying structure sentence', (Bever, Lackner and Kirk, 1974). The concept of 'propositional units' used by investigators in information processing and recall is also identical with our concept of sentence, (Buschke and Schaier, 1979). Our claim for the psychological reality of propositional structures, i.e., the contention that it is a very real

¹ 'System' is here used in the sense of Guilford (1967). He defines system in the following way "A system may be defined as an organized or structured aggregate of items of information, a complex of interrelated or interacting parts (Guilford, 1967:91).

human ability to break down complex clusters of information into conveniently cut blocks or minimal predication structures, is also upheld by the same sources. For example, Pitcher (1968) observes, "When a person thinks or believes something, it is always a proposition that he thinks or believes. Hence a proposition is an entity; for whenever a person thinks or believes something, there must be a thing that he thinks or believes", (Pitcher, 1968:30).

Our definition of sentence made in terms indistinguishable from those of proposition should not be taken as an unwarranted coalescing of the syntactic and the logical or semantic. In fact, it goes well with our contention earlier regarding a theory-data relationship between syntax and semantics. Sentence is a syntactic structure that accounts for the meaningfulness of an argument-predicate relationship. It is not, after all, either the predicate or the argument in isolation that is meaningful, but the act of predication i.e., the structuring of the two into a particular relationship, which invests the two with semantic significance.

3.1.4.2. Text, which we have defined as a system of sentences i.e., as something that derives its significance from the interrelations among its constituent sentences, corresponds to the Port Royalists' concept of 'Raisonner' or 'Reasoning' (the third operation of mind). The Port Royal Grammar makes the following distinctions.

All philosophers teach that there are three operations of our minds; conceiving: judging: and reasoning.

Conceiving is only the simple attention of the mind to things, either in a purely intellectual manner, as when I think of the notions of being, duration, thought, or God, or else accompanied by corporeal images, as when I imagine a square, a circle, a dog or a horse.

Judging is the affirmation that a thing of which we conceive is such or is not such, as when, having conceived of what the earth is and what roundness is, I affirm of the earth that it is round. Reasoning is the use of two judgements in order to make a third, as when having judged that all virtue is laudable and that patience is a virtue, I conclude that patience is laudable.

... the greatest distinction to be made about what occurs in our minds is to say that one can consider the object of our thoughts on the one hand, and the form or manner of our thought, the main form being judgement (proposition), on the other hand. But one must still relate to what occurs in our mind the conjunctions, disjunctions and other similar operations of our minds"

(Rieux & Rollin (Tr.) 1975:66-67)

Note especially the fact that their emphasis on the basicness of judgement (proposition or sentence) does not blind the Port Royalists towards the essential significance of 'reasoning' (textual or inter-sentential relations) in higher order cognitive operations.

3.1.4.3. The parallelism between the Port Royal conception of 'reasoning' and our characterisation of 'text' leads us to another important realization viz., that texts in natural languages are the exact analogues of proofs in special purpose languages (SPL). To quote Keenan (1975),

Basically, a proof is a text generated by rules that represent sound modes of reasoning. The rules take the sentences of SPL as basic elements and then structure them in particular ways. In other words, proofs have an internal structure, they are not merely sequences of sentences from SPL ...

So proofs have an internal structure and the rule systems that generate them constitute a formally serious text grammar. Of course, the texts that they generate are simple compared to natural language texts. Proofs are only a very special type of discourse. But it is still reasonable to hope that the logical analysis of simple discourses will prove useful in the general analysis of discourse in the same way that the logical analysis of simple languages has proven useful in the general analysis of natural language, (Keenan, 1975).

3.2. Having added some terms, howsoever few, to the vocabulary of linguistic theory, it is our duty to justify their introduction in terms of their empirical worth for the theory, for, as Weizenbaum (1976) observes, "... the very terms that a theory employs are symbols, which grope for their denotation in the real world or else cease to be symbolic", (Weizenbaum, 1976:140-141). Weizenbaum is of course conscious of the limitations on any enterprise to tie theoretical terms to the real world. He continues "... all theoretic terms, hence all theories, must always be characterised by a certain openness. No term of a theory can ever be fully and finally understood. Indeed, it may not be possible to fix the content of a single concept or term in a sufficiently rich theory (about, say, human cognition) [emphasis mine: TC] without assessing the truth of the whole theory" (ibid).

However, in our capacity as the proponents and not as evaluators of a theory of generative text grammars, we have no option but to justify the new terms in our theory and the metatheoretical attitude we have adopted towards them.

3.2.1. Our notion of coherence is very close to the notion of 'relevance' put forward by logicians like Anderson and Belnap. Both the notions are additions to their respective disciplines and both have been motivated by a desire to make the disciplines sensitive to issues that were neglected in the past. 'Relevance logic' grew out of a dissatisfaction with the counter-intuitive possibilities of proofs in traditional logic with its mindless insistence on the formal validity of reasoning involving strict implication. Relevance logicians strive to render logic sensitive to semantic facts in addition to facts of well-formedness. Anderson and Belnap (1968) present the case thus:

... informal discussions of implication or entailment have frequently demanded "relevance" of A to B as a necessary condition for the truth of $A \rightarrow B$, where relevance is construed as involving some "meaning content" common to both A and B. This call for common "meaning content" comes from a variety of quarters. Nelson (1930:445) says that implication "is a necessary connection between meanings"; Duncan-Jones (1934:71) that A implies B only when B "arises out of the meaning of" A; Baylis (1931:397) that if A implies B then "the intensional meaning of B is identical with a part of the intensional meaning of A"; and Blanshard (1939:Vol.2, 390) that "what lies at the root of the common man's objection [to strict implication] is the stubborn feeling that implication has something to do with the meaning of propositions, and

that any mode of connecting them which disregards this meaning and ties them together in spite of it is too artificial to satisfy the demand of thought"

(Anderson & Belnap, 1968:103)

Having established the indispensibility of meaning considerations for valid propositional connections. Anderson and Belnap go on to investigate how the commonality of meaning finds formal expression. They say, "... commonality of meaning in propositional logic is carried by commonality of propositional variables. So we propose as a necessary, but by no means sufficient, condition for the relevance of A to B in the pure calculus of entailment, that A and B must share a variable. If this property fails, then the variables in A and B may be assigned propositional values in such a way that the resulting propositions have no meaning content in common and are totally irrelevant to each other" (Anderson & Belnap, 1968:103).

In her own independent way, Bellert (1973) arrives at a position remarkably similar to the one demonstrated here. She says, "... a text can be said to be coherent only if it is the case for any of its constituent sentences that its sets of consequences intersect with the set of consequences of the remaining sentences" (Bellert, 1973).

Artificial Intelligence, data processing, communication sciences and related areas of study use 'coherence' in a way that is exactly identical to our own. Hobbs (1979)

states "If a text strikes one intuitively as coherent, then coherence relations can be found linking its various parts" (Hobbs, 1979). In fact he goes on to correlate the degree of perceived 'coherence' with the effected recognition of relations in a text. "... a text will strike one as coherent to a degree that varies inversely with the degree of "difficulty" the inferencing operations have in recognizing some coherence relation. Coherence thus plays a role beyond sentence boundaries analogous to the role played by grammaticality within sentences. It is the mortar with which extended discourse is constructed" (Hobbs, 1979:67-90).

'Coherence' thus constitutes an empirical claim viz., that it is a characteristic of communication and part of human linguistic competence. Given a linguistic corpus like

John likes potatoes. He is going from Paris to Istanbul,

a native speaker will almost always come to the conclusion that Istanbul offers more facilities than Paris for John to indulge his pleasure of eating potatoes. This shows that human beings are quite capable of going to great lengths, in fact way beyond what is strictly verbally given, in order to find coherence in what strikes their ears or meets their eyes.

3.2.2. Linguists and psychologists have attempted to show how coherence is at once related to, and is a function

of, knowledge structures including knowledge of syntax.

Thus Smaby (1979) writes,

4 (Smaby's numbering)
Bill tickled John. He squirmed.

Crucial to the interpretation of the pronoun in this case is the knowledge that it is the tickled person that has reason to squirm; that is, John's squirming is a relevant issue, Bill's squirming is not. Informally speaking the syntactic form of the context prepares the hearer for interpreting pronouns by providing a ranking of possible interpretations, from which the hearer selects the highest ranked interpretation which provides a relevant reading of the sentence. (Smaby, 1979:37)

One has only to translate the term 'relevant' to 'that which makes for coherence' in order to understand the interplay between the syntactic phenomenon of pronominalization and the semantic one of coherence in this text.

Psychologists trying to explain efficient acquisition of knowledge also use similar notions and identical terminology. Thus, explaining the basic character of the human ability to structure concepts as 'dichotomous constructs' in acquisition and representation of knowledge, Kelley (1955) observes;

Suppose we say that the construct is not sex, Z, but masculinity, Y. Then, is not the woman, C, just as unmasculine as the time of day, O? Our answer is no. She is much more relevantly unmasculine than the time of day. The notion of masculinity is predicated upon a companion notion of femininity and it is the two of them together that constitute the basis of the construct. Masculinity would mean nothing if it were not for femininity....

... we consider the contrasting end of a construct to be both relevant and necessary to the

meaning of the construct For example, it makes sense to point to a chair and say, 'That is not a table'. It makes no sense to point to a sunset and say, "That is not a table". (Kelley, 1955:59-64)

Coming closer to linguistic issues, we see that rules governing conversation, for the most part, are relevance or coherence conditions. Schegloff (1972) uses the notion of 'conditional relevance' to characterise what he calls 'summons-answer (SA) sequence' in conversational openings. He says, "By conditional relevance of one item on another, we mean: given the first, the second is expectable; upon its occurrence it can be seen to be a second item to the first" (Schegloff, 1972). Thus he claims as a valid rule of conversation, the statement, "A[nswer] is conditionally relevant on the occurrence of S[ummons]" (ibid).

Going deep into these statements made from different points of view, we are able to abstract two essential aspects that underlie the concept of coherence in all of them. These aspects are 'connection' and 'contiguity'. Thus we may say that coherence is a function of the connection between contiguously occurring elements.

3.3. The syntax of the text seeks to account for coherence of sentence systems with reference to cohesion or principles of sentence organization made in terms of interconnections among elements in contiguously occurring sentences and constraints on combinability or concatenatability between a sentence and the one that immediately precedes it.

3.3.1. The centrality of attention we attach to the syntax of the text is motivated also by an epistemological claim viz., that knowledge is acquired and represented in terms of significant relations between objects. The syntax of the text is such a system of representation or a cognitive structure realised as coherent, communicative or linguistic gestalts. The view underlying this perception of textual syntax represents a bringing together of anti-atomistic philosophy of matter, the philosophy of mind that inspired it, and the anti-associative, or Gestalt, psychology. Thus the epistemological claim we have made above sounds almost an echo of J.B. Stallo's second 'irrefragable truth' in his epistemological system, presented by Strong (1974) as follows:

Objects are known only through their relations to other objects. They have, and can have, no properties save these relations, or rather, our mental representation of them (Strong, 1974).

Gestalt psychology carries the point further, equating understanding itself with perception of relations between objects. Asch presents the case thus,

To understand is to have an awareness of a required relation between immediately given facts. When such understanding is present, the relation is experienced as following from the given facts - that is, the nexus between them is itself understandable. Given two premises and a conclusion, the latter either develops out of the former or contradicts it. Such relations, which have the character of "If A, then B and only B" contrast most strongly with the association between heterogeneous facts: the terms and their relation form a

unit all parts of which are dependent upon one another The first point of the gestalt account of thinking is that understanding or insight in the sense described (here) pervades human experience and that no thinking is possible in its absence" (Asch:1968).

From the view that representation of human knowledge or understanding takes the form of an abstract and elaborate relational grid and that participation in intelligent and intelligible experience is an instance of interpretation of novel experiences in terms of this underlying grid, to the view that linguistic knowledge is the knowledge of a relational system represented internally and realised in speech production and processing, does not require any great conceptual leap, but is only a logical step. However, it requires new theoretical lenses to perceive the nexus or grid of relations holding between what were heretofore considered the maximal grids or upper bounds of linguistic theoretical representation viz., sentences. A theory of generative text grammars provides just these new lenses.

We hope we have been able to establish the motivation behind our introduction of new terms into linguistic theory by revealing their consanguinity with notions like relevance, meaningfulness, relational network etc. used by investigators into principles of cognitive organization. Having thus explicated crucial terms, we shall proceed to look at the nature of the relationship between sentence and text envisaged in the theory.

3.3.2. Our definition of text as a system of sentences itself provides a clue to the fact that the relationship that interests us is not just a taxonomical one of 'composed of' holding between texts and their component sentences. On the contrary, we want to concentrate on the interrelations among the constituent sentences underlying texts. Being abstract underlying structures, sentences do not always receive surface interpretation in the same form in which they appear at the deep structure level. So it is in terms of the interrelations among these abstract configurations specifiable at the deep level that we seek to account for the coherence of texts at the surface level. By defining sentence as a purely theoretical term and using it in order to explicate the surface phenomenon of textual coherence we hope to steer clear of the terminological confusion that surrounds the former term in classical TGG. That is to say, we have been able to maintain the theory-data, representation-realization, or genotypic-phenotypic distinction that TGG has not been able to maintain. (cf. Luelsdorff, 1966:225-237)

3.3.3. This being the case, the task of a text grammar turns out to be the specification of sentences and their interrelations that constitute textuality or coherence and providing principled paths of progression from the deep to the surface level. In terms of conventional TGG, the former task would belong to the phrase structure sub-component and

the latter to the transformational sub-component of the syntactic component. We expect to present here a tentative model of the phrase structure sub-component of such a grammar. Unhappy with having to maintain a dichotomy or discontinuity between the two sub-components, we have tried to characterise at least some transformations as direct outgrowths of the phrase structure component. We expect this 'phrase structure dependency' of transformations not to conflict with the TG concept of transformations being 'structure-dependent'. Our characterisation of lexicon being continuous with the PS component also goes well with TG concepts. However, a detailed investigation into the nature and function of transformations and a formally rigorous description of the structural conditions for, and ordering constraints on the application of individual transformations will be a little premature at this time. Yet, at a later point, we shall present a case for the inevitability of characterising at least some of the well-established transformations as being sensitive to inter-sentential relations specified by our PS rules. Such a step, we believe, will be a resuscitation of the 'double-based' transformations originally postulated in Syntactic Structures and unceremoniously discarded in Aspects. But we would rather choose to rest the issue till such time as the strength of the motivation for a text theory is recognised and suggested initial models tested for their strengths and weaknesses.

3.4 An Enriched PS Component of English

1. T(ext) \longrightarrow $S_0 + Rt + S_1(+ Rt + S_2 \dots (+ Rt + S_n))$
2. S \longrightarrow NP + VP
3. NP \longrightarrow (Det)(+Adj) + N
4. VP \longrightarrow Aux + V(+ NP)(+ Adv)
5. Adv \longrightarrow (place)(time) etc.
6. Aux \longrightarrow {Modal
Tense}
7. Rt (Relatant) \longrightarrow {Item
Process}
8. Process \longrightarrow {NP_{Ref}(erent)
VP_{Ref}
S_{Ref}}
9. NP_{Ref}(Process) \longrightarrow {Definitivization
Pronominalization
Deletion}
10. VP_{Ref}(Process) \longrightarrow {Deletion
Gapping}
11. S_{Ref}(Process) \longrightarrow S_{red}(uction)
12. S_{red} \longrightarrow {Infinitivization
S_{nominalization}
S_{pronominalization}}

$\left\{ \begin{array}{l} \text{NP}_{\text{Ref}} \\ \text{S}_{\text{Ref}} \end{array} \right\}$

13. Item



14. NP_{Ref}(Item) →

NP in following S not NP in immediately preceding S
 NP in following S like NP in immediately preceding S

following S complement of immediately preceding S
following S in case the immediately preceding S
following S result of immediately preceding S
following S increment of immediately preceding S
following S in spite of immediately preceding S
 immediately preceding S in spite of following S
if not the immediately preceding S, the following S

15. S_{Ref}(Item) →

following S the $\left\{ \begin{array}{l} \text{cause} \\ \text{connection} \end{array} \right\}$ of immediately preceding S
 following S $\left\{ \begin{array}{l} \text{at the time of} \\ \text{during} \\ \text{later than} \end{array} \right\}$ immediately preceding S
 following S at the location in immediately preceding S
not immediately preceding S and not following S
 $\left\{ \begin{array}{l} \text{NP} \\ \text{VP} \end{array} \right\}$ in immediately preceding S exceeds $\left\{ \begin{array}{l} \text{NP} \\ \text{VP} \end{array} \right\}$ in following S in $\left\{ \begin{array}{l} \text{Adj} \\ \text{Adv} \end{array} \right\}$

16. Lexicon

| | | |
|--|---|--|
| NP in following S <u>not</u> NP in immediately preceding S | → | another, {the} other {s} |
| NP in following S like <u>NP</u> in immediately preceding S | → | such, similar |
| following S <u>complement</u> of immediately preceding S | → | that |
| following S in <u>case</u> the immediately preceding S | → | if |
| following S <u>result</u> of immediately preceding S | → | therefore, so, as a result, consequently |
| following S <u>increment</u> of immediately preceding S | → | and, moreover, besides, also |
| following S in <u>spite</u> of immediately preceding S | → | but, yet, still, nevertheless, evenso, eventhen, however |
| immediately preceding S in <u>spite</u> of following S | → | eventhough, even. if, though, although |
| <u>if not</u> the immediately preceding S, the following S | → | otherwise, or, or else, either ... or |
| following S the { cause connection } | → | because, since |
| following S { at the time of during later than } | → | then, meanwhile, afterwards, when |
| following S at the <u>location</u> in immediately preceding S | → | there, where |
| <u>not</u> immediately preceding S and <u>not</u> following S | → | neither ... nor |
| { NP VP } in immediately preceding S exceeds { NP VP } | → | |
| in following S in { Adj Adv } | → | ...er than |

3.4.1. Our model by no means seeks to generate all the well-formed texts possible in English, though it will generate only well-formed texts. In fact, it generates highly idealised data. We have especially restricted the variability in positioning of S's or what may be called subordinate and co-ordinate clauses, which in our system are surface interpretations of underlying S's. This necessarily neutralises the distinction between complex/compound sentences and texts maintained sometimes by text grammarians themselves. The disregard shown to these aspects may be interpreted as a serious neglect of important semantic notions like foregrounding or focus. But we do not subscribe to the view that a purely syntactic determination of these notions is possible; nor do we think that surface positioning of clauses is an honest reflection of speaker-attitude towards the relative importance or otherwise of clauses in a text. In fact, surface positioning may well belie the speaker's intention in this regard, to reconstruct which satisfactorily the linguist will have to resort to stress and intonation features as well as to facts not necessarily linguistic. Thus, for example, an utterance like, "I like mangoes because they are juicy", may, if interpreted as carrying focus on the grammatically main clause, distort the speaker's intention for whom the reason may be more important than what it is a reason of.

Moreover, at the present stage of our enterprise, we are more interested in the deeper-than-surface levels where, or in terms of which, the interrelations among the constituents of a text can be specified, than in accounting for each and every text that comes our way. We are not unduly apologetic about having to weaken the generative capacity of our grammar. For, in the ultimate analysis the grammar can be seen to compensate for its limitations with greater depth of analysis and breadth of explanation.

3.4.2. Our idealisation rests on what we perceive as the 'normal', 'unmarked', or 'favoured' order of sentences in English texts. While we do not claim any canonical basicness to the order implicit in the model, we do not want to dump all variations from it into the stylistic ground either; we just want to rest the issue till more research and deliberations go into the surface properties of texts. But a word or two about the notion 'immediately preceding S' will be in order.

We may point out that the physical connotations of the label we have used here should not be taken too literally. We could have equally well used Haviland and Clark's (1974) terms 'context sentence' and 'target sentence', respectively for 'immediately preceding S' and 'following S'. Purged of their strong experimental flavour, these terms honestly reflect our notions. Various other possibilities of

labeling also suggest themselves, like 'antecedent' and 'sequent', but our purpose is mainly to emphasize the theoretical nature of the notion. This notion is essentially an idealization, and stands for a minimal textual context both necessary and sufficient for the proper generation of the Rt and consequently for the correct interpretation of the given or following S. What it immediately precedes is an Rt node. It is abstracted from, or is a condensation of what is commonly referred to as 'previous discourse'. As a term occurring in a theory that seeks to account for coherence, it is motivated by the 'contiguity' requirement, which, along with 'connection', is responsible for coherence, or, equivalently, constitutes cohesion. As an idealization, it may not always directly correspond to anything at the purely observational level, but to a psychological notion like Harris's (1971) 'seen before and now remembered' (Wales, 1971:71). Often the immediately preceding S of a given S may be removed from it by lots of linguistic or other material. But the language user has the ability to remember, or recover into the immediate context, the S carrying the information relevant to the proper processing of a given S.¹ Sometimes, of course, it corresponds literally to the S that immediately precedes a given S physically. What is important to notice here is that this idealized notion represents

¹ See section 4.2.7.6.

a psycholinguistically real procedure whereby language users make use of information that has gone before in order to understand that which is at hand. This, we believe, is the actual or significant meaning of idealization. What we, as linguists, have done in positing such an idealized entity as the immediately preceding S is a replication of the information processor's weeding out of material that intervenes between two elements that are connected, in order to bring them in contiguity. Thus, confronted with a definite NP, both the linguist and the language user refer back to some previous occurrence of an identical NP, and the S in which it occurs is labelled the immediately preceding S. For it is this S which is relevant for establishing the reference of the definite NP at hand. Thus idealization comes to mean ignoring, for the time being, what is irrelevant for present purposes.

3.4.3. A look at our model of PS rules should reveal that its most radical departure from its counterparts in conventional TG is the inclusion of the category 'Rt' (= Relatant) and the formal mechanism of its expansion or rewriting. This category specifies the kinds of relations possible between sentences related by immediate precedence and succession. In other words, it specifies the kinds of semantic or coherence relations that obtain between the constituent sentences of a text. The introduction of this category has

been motivated by the need to account for the following linguistic facts.

1. The impossibility of certain utterance-types to function as conversation initiators.
2. The weirdness of certain sentence combinations and sequences, or, equivalently, the impossibility of the relation of immediate precedence and succession to exist between certain sentences.
3. The impossibility of giving even dictionary definitions of the meanings of a class of lexical items except with reference to a sentence that precedes them.
4. The full intelligibility of sentence fragments or elliptical sentences in discourse.

3.4.4. Leaving our explanations of these facts to emerge later, we shall now concentrate on some general characteristics of the members of the category Rt. This category, as formulated in our model, cuts across the boundaries of their classification in grammars and rhetorics from ancient to modern times. Their rewriting as both 'item' and 'process' may appear as confounding the theoretical distinctions hitherto maintained in linguistics. But it goes well with our refusal to maintain any dichotomy between declarative and procedural knowledge and our readiness to consider 'items' as underlaid by 'processes'.¹ As items, the

¹ See section 4.2.7.8.

members of the category cover the ground of what have been variously called, 'subordinating and coordinating conjunctions', 'discourse connectives', 'transitional devices', 'sentence adverbials', 'cataphoric and anaphoric expressions', 'cohesive devices' and 'peskey little particles' or PLP for short (Grimes, 1975). It may be objected at this point that to class all these together under one head is a category error. But from our perspective, they all share invariant and generalisable features of form and function, and not being able to class them together for want of historical precedents would lead to the loss of a significant generalisation. The absence of historical precedents can be explained as a result of the non-availability of a comprehensive text theory. Viewed from the vantage point of such a theory, they show up common characteristics that justify their classification under one head. For, as Dell Hymes observed, "... when the elements of a structure (on the various levels of language) are examined in the light of function at a different level or phase, new groupings and structural relations appear. Especially is this so when the function is of a higher level or phase, and all elements which serve or manifest it, which are mobilized or organized in terms of it, are sought" (Hymes, 1964).

3.4.5. Thus, our classing of the members of the category Rt together was motivated primarily by the referential

function common to all of them. They share the ability to refer to sentences or elements within sentences that precede and succeed them. From the point of view of an explanatory theory that sets out to account for the coherence of natural language texts, they are the formal signals of semantic compatibility relations, or syntactic reflections of coherence relations holding between sentences in a natural sequence. They are thus the natural language signals of the 'shared variables' in compound propositions of logic. In fact, some of them may appear to be indistinguishable from the connectives of symbolic logic. But it is only a matter of interesting speculation now whether all members of the category R_t can be translated into logical notions and notations. Because of their semantic richness relative to that of the connectives of ordinary logic, they may require an extension of existing logical systems in the way temporal, deontic, doxastic etc., systems are extensions of conventional two-valued logics.

3.4.6.1. On our view, the members of the category R_t are instances of abstract meta-level sentence reduction processes. We shall elaborate.

Sentence reduction is used and understood in TG as the transformational contraction of full underlying sentences into dependent surface units below the sentence rank, viz., phrases. Such rank shift or reduction is a result of transformational deletion or structural change of sentence parts subject to the condition of unambiguous recoverability

of the 'victims' or the unique reconstructibility of the originally full deep structure sentence. Thus the two deep structure S's,

"A girl lives across the street. The girl is a dancer".

can combine transformationally to form

"The girl across the street is a dancer".

Now retracing the transformational path we get an intermediate structure like,

"The girl who lives across the street is a dancer" and finally,

"A girl lives across the street.. The girl is a dancer".

This reconstructibility constraint clearly is motivated by semantic considerations, mainly that of non-ambiguity. Remember that other syntactic processes of deletion are also subject to similar semantically motivated constraints, as is demonstrated by Hankamer (1973).

3.4.6.2. As our model of PS rules, especially the right hand expansions of R_t , should suggest, we consider the members of this category to be the results of meta-level reduction of sentences, albeit meta-sentences making statements about the relation between theoretical entities like sentences or elements in sentences. These rewrite rules are thus instructions to the linguist on one hand and the speaker - listener on the other as to how they should go

about the task of reconstructing the underlying structure of texts i.e., the interrelations among the component sentences of texts. They can thus be said to be performing a meta-linguistic function, viz., that of calling attention to the code while being themselves a part of the code. That language contains such meta-linguistic devices is not a novel idea in linguistics. It is this meta-level characteristic that Benveniste (1933) expressed beautifully by calling an anaphor (L'anaphorique), 'signe d'un signe' - sign of a sign (Palek, 1968:14). Also, Habermas (1970) assigns a meta-linguistic status to both deictic and anaphoric pronouns (p. 368). Linguists have not shied away from positing meta-level instructions underlying certain syntactic peculiarities of languages. For example, Sankoff and Brown (1976) discusses the role of the "ia" particle in Tok Pisin (a dialect of Papua New Guinea). Distinguishing between the 'identification' and the 'characterisation' functions of 'ia' they say,

... in using the express "N(oun) ia" about an item mentioned for the first time, about which the hearers may have no prior knowledge, a speaker can use the slot provided after ia to supply a description or characterisation He is thus saying, in effect 'this N' (about which I am going to tell you something relevant) instead of 'this N' (which you are supposed to know about). That is, identifications instruct hearers "search in your file to see which one this is", characterizations instruct them "open a file on this N, and put this information in it" (Sankoff and Brown, 1976).

Our characterization of Rt as results of meta-level sentence reduction processes, thus seeks to establish a level at which the seemingly irreconcilable concepts 'item'

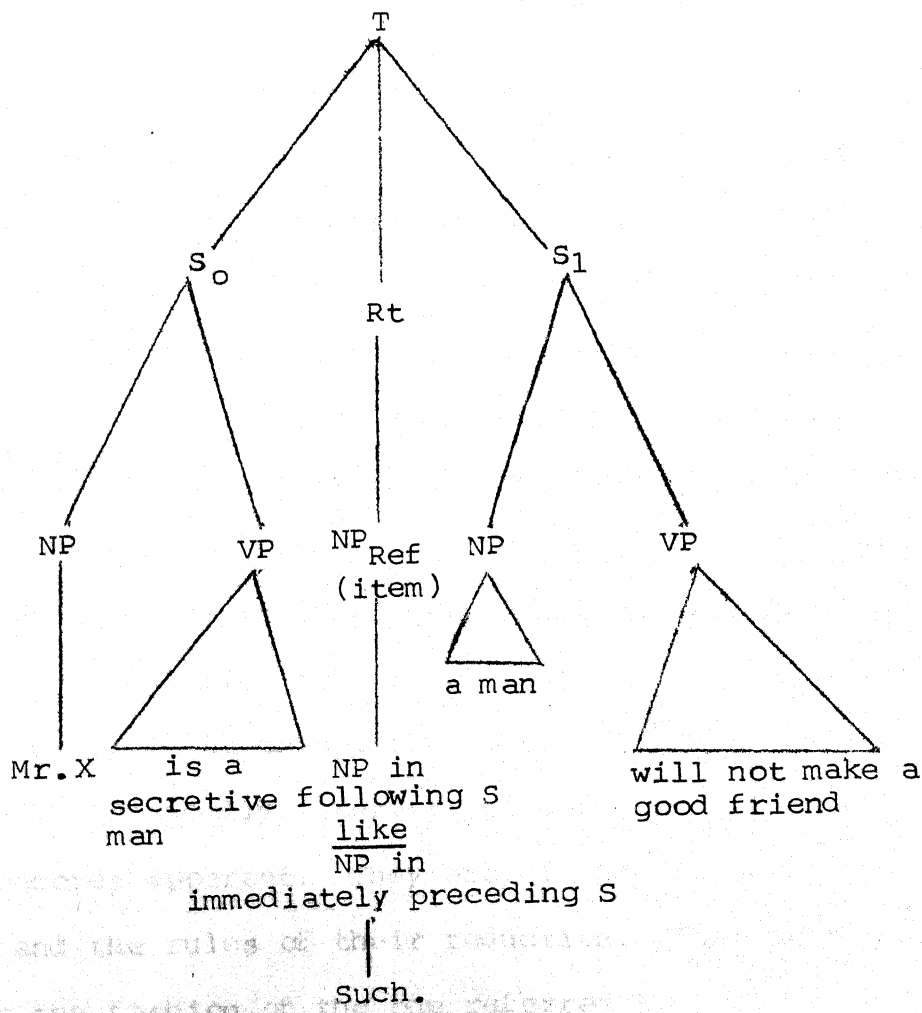
and 'process' come together. The sentences that underlie them and the processes by which they are reduced can be considered their 'associated procedures' i.e., specification of the processes necessary for their correct interpretation. Thus processes underlie items, or items are manifestations of processes.

For example, take a text like the following

Mr. X is a secretive man. Such a man will not make a good friend.

Following our PS rules the deep structure of the text can be specified as the tree diagram given below.

(Inconsequential details omitted)



Here the R_t that relates S_0 and S_1 is first rewritten as 'NP Ref(item)', which is expanded further as 'NP in following S like NP in immediately preceding S'. This meta-sentence is then reduced to the surface lexical item 'such'. Our claim is that the distance between 'NP Ref(item)' and 'such' is covered by a process viz., sentence reduction. Until 'such' is understood as a condensed version of the meta-sentence given, the semantic continuity relation between the two surface syntactically independent units of the text, or, in other words, the coherence of the text, cannot be accounted for.

3.4.6.3. Now let us check the members of the category R_t and their underlying meta-sentences against the reconstructibility condition posited for reduced sentences. There must be rules, for example, of the type that only sentences with the 'copula', 'have' or their cognates (live, stay etc.) as the main verbs can be reduced to prepositional phrases. Thus, "The man has a lot of money" $\xrightarrow{\text{S red}}$ "The man with a lot of money"; but, "The man who works in a factory" $\xrightarrow{\text{S red}}$ *"The man with a factory". It is natural to expect rules or constraints of this kind for reduction processes underlying R_t also. But it is at this point that one of the most linguistic theoretically interesting features of this category becomes apparent. They are at once reduced sentences and the rules of their reduction. That is to say, no rule in the fashion of the one referred to above need be

formulated to interpret them correctly. This is so because their form and function are inseparable and this form-meaning integration ensures both their correct representation in the deep structure and realization at the surface. Thus the reconstructibility constraint is coded into them and they are incapable of violating this condition. They are the ideal reduced sentences. Coming to think of it, with a little indulgence in imaginative extravagance, it is almost as if language has taken the pen out of the linguist's hand and written the grammar, or at least a part of it, for him.

3.4.6.4. Our characterization of Rt as reduced forms of underlying sentences, we believe, agrees, at least in spirit, with the sentiments of generative semanticists in matters regarding the representation of presuppositions and pre-lexical transformations effected on semantic deep structures to yield lexical items (like causative verbs) with complex meanings. Thus, Morgan (1969), in connection with incorporating presuppositions into linguistic representation, observes, "Many kinds of presuppositions 'act like' previously uttered sentences ... but to describe both with the same set of rules, it is necessary to represent presuppositions as trees to the left of the sentences they are associated with [emphasis mine; TC] (Morgan, 1969:49-70). Lakoff (1969) also toys with a similar idea. She wonders, "whether representation (of presuppositions) would be done by assuming separate sentences (e.g., I hope this S is true, or I believe

that the subject of this sentence is true), or in another way" (Lakoff, 1969:608-615). McCawley's (1968) proposal for the derivation of superficially simple but semantically complex causative verbs like, for example, 'kill' from underlying, propositional structures like 'cause to cease to be alive', is yet another instance of linguists' readiness to posit deep level sentences in order to achieve greater explanatory power. We have essentially done the same.

3.4.7. One of the Chomskyan articles of faith - in fact one in which his vision of man as uniquely gifted with language ability shines through -, viz., that the linguistic ability of the native speaker is coincidental with a general linguistic theory becomes much more interesting in the light of our contention regarding the nature of the category Rt. It amounts to a claim that a process like sentence reduction, posited by linguists for purposes of linguistic description is at work behind the existence of a linguistic category itself. Add to this the fact that this category is a linguistic universal. The interpretation of Rt as the result of a meta-linguistic reduction transformation necessarily implies the presence of a general linguistic theory behind not only the ontogenetic but also the phylogenetic evolution of language.

3.5.1. It is obvious that the interpretive meta-statements underlying Rt invariably make reference to the sentences

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that precede and follow them. So it is only logical to expect that the presence of the members of this category presupposes previous linguistic context. And not just any linguistic context either. It is required that the previous context share some variable with the following one, i.e., that the two be somehow relevant to each other. These two requirements together ensure well-formedness or coherence of texts. The first requirement explains why some utterance types cannot function as conversation initiators. For example, the anomaly of trying to start a conversation with an utterance like "Others please listen to me" can be traced to the violation of the requirement of previous linguistic context presupposed by the Rt 'others'. It is utterances of this type that Waterhouse (1963) called, in a classic case of oxymoron, 'dependent sentences', i.e., surface syntactically independent strings depending on something that has gone before for its semantic completeness or coherence. This context requirement written into the specification of the form and function of Rt thus explains the impossibility of certain utterance types to function as conversation initiators, cited as instance number 1 in Section 3.4.3.

3.5.2. The second requirement that the textual constituents sought to be connected by Rt be relevant to each other is also a powerful constraint. Any violation of this constraint will lead to ungrammatical (i.e., incoherent in our formulation) sequences or non-texts. Thus the sequence

*There is only one God and look at the soaring sugar prices

is rendered ungrammatical or incoherent because it fails to meet the relevance requirement imposed by the Rt 'and' on sentences that precede and follow it. It is easy to see how this requirement ties up with, or is a linguistic reflection of, what we have called the fundamental human drive to see order, meaning, coherence or relevance in contiguously occurring elements of experience. The members of the category Rt can thus be seen to be vital links in the universal network of epistemological representation, regulating (i.e., facilitating as well as restraining) information augmentation. We cannot resist the temptation to consider Rt as playing a significant role in the cognitive operations touched upon by Schaar (1978) in the following words.

Demonstrating how the consciousness of the past can be "perceived as a unity in spite of its continuous flow", Husserl explains that in the perception of a temporal object the elapsed phases, though modified and receding into the past, are still retained by the perceiver. A similar model showing the mechanism of a dynamic contextual unit was designed by Mukarovsky, diagrammatically illustrating the sense of unity of the context and the accumulation of meanings. Mukarovsky's model demonstrates a dialectic interdependence of "semantic statics and dynamics". This model was adapted and developed by Veltrusky in an analysis of semantic contents in dramatic dialogue (Schaar, 1978:380).

Being a part of the universal cognitive mechanism of man, the Rt category should be of tremendous interest to universal grammarians/rationalist philosophers. It is ironic that a hardcore transformationalist like Jackendoff should

exclude co-ordinating conjunctions and complementizers from the purview of \bar{X} syntax because "... they do not participate in the grammar in the same way as the other categories" (Jackendoff, 1977). Contrast this with the recommendation of the Port Royal grammarians; "... one must ... relate to what occurs in our mind, the conjunctions, disjunctions and other similar operations of our mind...." (Rieux and Rollin, 1975). It is clear that a linguistic theory that seeks to contribute to the understanding of human cognitive structures cannot but give due recognition to the category Rt.

Thus the category Rt with its ability to refer to what goes before and comes after it, and with its relation to human rationality and craving for coherence, is used in the explanation of the weirdness of some sentence sequences or combinations pointed out as instance number 2 in Section 3.4.3.

3.5.3. The rather unconventional lexical representations we have given to the members of the category Rt are motivated by the fact that, given the characteristics elaborated above, there is no other form of representation that would do justice to them. Moreover, these representations, as far as our understanding goes, reflect the intuitions of the native speakers as to the meaning, form, and function of these items in texts. Standard lexicographic practice also is in line with, if not formally equivalent to, our representations.

belonging to the category Rt.

3.6. We shall now turn our attention to Rt manifesting as processes. This concept has been motivated by the desirability of viewing transformations as triggered by, or being manifestations of, intersentential relations. We shall deal with this at greater length in the next chapter. Nevertheless we shall take an opportunity now to exemplify this concept.

Deletion transformations must unquestionably be, and are, sensitive to intersentential relations, for deletion of an element can only be effected under the condition of its identity with another element in its linguistic vicinity. Even then the transformation is constrained by the recoverability condition which stipulates that the deleted item be uniquely recoverable. And it is the case that the element with which identity is struck is always in a sentence other than the one in which the deleted element occurs. Deletion, conceived of as an Rt showing up as a process provides the reference to a previous linguistic context necessary for the establishment of identity and for the reconstruction of the meaning of the post-deletion fragments. The coherence or meaningfulness or intelligibility of elliptical utterances is thus accounted for by the fact that the transformations that leave the originally complete sentences truncated are part of the devices of cohesion. That is to say, the structural descriptions that trigger them necessarily refer to relations across sentences, and can thus best be characterised as belonging to the category Rt.

To say that transformations are sensitive to inter-sentential relations does not go against the spirit of TGG. In fact, TGG has been able to escape this conclusion only because of the confusion surrounding the concept and use of the term 'sentence', about which later. The 'generalised' or 'double-based' transformations, as opposed to 'singular' transformations that one comes across in the early stages of TGG are the legitimate precursors of the view that transformations are sensitive to textual relations. Relativization, which, in current TG practice, is treated as the nesting or embedding of one S within another, is such a transformation, if one sticks strictly to the use of the term 'sentence'.

Needless to say, more empirical research is required before we can hope to conclusively prove the textual dependence of transformations.

Chapter 4

Metatheoretical and Explanatory Gains

Although periods of fruitful exploration of new domains of experience may often naturally be accompanied by a temporary renunciation of the comprehension of our situation, history of science teaches us again and again how the extension of our knowledge may lead to the recognition of relations between formerly unconnected groups of phenomena, the harmonious synthesis of which demands a renewed revision of the presuppositions for the unambiguous application of even our elementary concepts.

Niels Bohr
Analysis and Synthesis in Science

4. Introduction

In the previous chapter, we have seen how textual relations could be incorporated into TGG without any radical restructuring of the theory. Dealing with textual relations does not necessarily lead to a proliferation of the theoretical constructs of TGG or to a complication of its machinery. We shall now see how, by defining texts as the "natural domain of grammar", the theory can be rendered more elegant in the metatheoretical sense of the term.

We perceive the removal of internal inconsistencies as the first step towards achieving such elegance.

4.1. Inconsistencies surrounding the term 'sentence'

The concept and use of the term 'sentence' in TGG have all along been riddled with vagueness, imprecision, and

consequent inconsistency.. In fact, the entire history of linguistic thought is dotted with unsuccessful attempts at defining the term in an unambiguous and non-circular fashion. One has only to look at the desperation, with a dash of wry humour, that characterises Lambek's statement quoted by Quirk and Svartvik to gauge the feeling of people thinking on these lines. Lambek says, "I have been unable to find any agreement among modern linguists as to what constitutes a grammatical sentence. At one extreme there are those who call any utterance a sentence, that is, any string of words ever mouthed by poet or peasant. At the other extreme there are those who declare cannibalism ungrammatical on the grounds that man does not belong to the class of food nouns" (Quirk and Svartvik, 1966).

The failings of pre-TGG linguistic thought in this regard are understandable in a way those of TGG are not. The latter has always espoused formal and scientific rigour in theory construction and so should do much better than the earlier theories. Yet, the TG treatment of the term 'sentence' is ambiguous between two senses, in one of which it is a theoretical entity and another in which it is a primitive. Thus, after a review of the fortunes of the term with special reference to TGG, O'Connell concludes: "The concept of the sentence itself is problematical, less well understood in a scientific sense, less agreed upon than the concepts it is used to explain. It does not contribute greater intelligibility to the discussion despite all that has been said about it in recent decades of generative linguistics" (O'Connell, 1977).

4.1.1. As indicated earlier, the failure of TGG to use the term consistently is hard to explain. Not that there hadn't been warning signals. Bar-Hillel in his review of Lyons (1968) had pointed out the dangers inherent in neutralizing the distinction between 'sentence' and 'utterance', i.e., between a theoretical term and a term referring to data. Yet the TG theorists went on ignoring the distinction and thus rendered themselves liable to the charge of 'mixing levels'. But this may be overlooked as a case of accidental identity between a term used in ordinary exposition and one used in theory.

4.1.2. The really harmful imprecision in the TG use of the term 'sentence' is found in the fact that it has been made to stand for different things at different times. Thus, while in the TG definition of data the term is used to mean something like a syntactically independent unit of utterance, in analytical practice it covers everything from phrases, clauses (both main and subordinate, and, among subordinate, embedded and non-embedded), kernel structures (basic sentences), and, compound sentences, (i.e., obtained through a combination of some of these). The difficulties with this kind of practice are numerous.

4.1.2.1. One such difficulty is that, while considering surface syntactic independence as the criterial qualification for any string of linguistic elements to pass muster as decent enough data for linguistic theory, the theory also

seeks to account for them in terms of deep or underlying sentences whose completeness and independence are results of theoretical reconstruction. The criterion of sentencehood employed by TG remains mysterious. For example, which criterion Chomsky has used in denying any grammatical status to the reference of 'he' in "He has arrived", while granting such status to the non-co-reference between the 'he' and 'John' of "John seems to me to like him" (i.e., in arguing that the non-co-reference of 'John' and 'him' in the latter is a matter of sentence grammar while the reference of the 'he' of the former is not), is not clear. It seems to us that he is in effect saying that 'referential identity and difference' are grammatical matters only in so far as both the NP's occur in the same 'construction which is not part of a larger construction' (this is a Neo-Bloomfieldian definition of 'sentence'). By the same argument, the relation of non-co-reference between 'John' and 'him' is a matter of grammar, while the reference of the same 'him' is not; for, if it is not co-referential with John, it is so only with some NP outside the construction, and relations with anything outside it are not part of grammar. Not only is the statement of domain severely restricted, but also the very criterion used in such a statement is severely undercut by using the same term for both the domain and subdomains (cf., p. 107 ff).

If there is a criterion, say, an identifiable NP + VP structure which is both a necessary and a sufficient condition for sentencehood, and which is met by both the surface S and

the underlying S, the question still remains as to why a minimal NP + VP structure as well as a combination of such structures has the same name. Or, if the first rewrite rule of a PS component of English is $S \rightarrow NP + VP$, why should a rule like $S \rightarrow S+ \text{ and } +S$ be followed as well? Otherwise it must be admitted that such relations as are represented by 'and' are within the domain of TG, i.e., the theory must allow rewrite rules like

$$S \rightarrow S+ \left\{ \begin{array}{c} \text{but} \\ \text{because} \\ \text{if} \\ \text{or} \\ \text{yet} \end{array} \right\} +S \text{ etc.}$$

But TGG clearly shows its disinclination to grant any such thing (cf., Jackendoff, 1977, also Section 3.5.2).

Again, just as TGG has mechanisms like selectional restrictions to ensure the well-formedness of NP + VP structures, it must have mechanisms ensuring the combinability of two or more simple S's to form one compound S. If ensuring the non-generation of "Colourless green ideas sleep furiously" is a function of TGG, so should be non-generation of "God is alive and just look at the sugar prices soaring". It would be inconsistent to consider S as a constituent and not to have a mechanism to ensure the well-formedness of the combination of two or more of these constituents.

4.1.3. TGG has equated creativity of language use with recursiveness in theory and embedding transformations in accounting. TGG has thus distinguished between embedded and

non-embedded S's. There is confusion at the very core of such a distinction because, to be embedded or conjoined is not a property of individual sentences but essentially an intersentential notion, specifiable only in terms of the kind of relations that obtain between two S's. If this is so, then TGG deals in practice with intersentential or textual relations, though theoretically it claims to be a sentence grammar. The lack of fit between theory and practice should have been all too apparent but for the fact that the clouded concept of sentence camouflages the contradiction. The moment a stringent definition of 'sentence' is imposed, one of the following conclusions will become inescapable:

- 1) A sentence grammar is a hopelessly inadequate enterprise.
- 2) TGG is in practice not a sentence grammar but, at least partially, a text grammar.

4.1.4. The above conviction grows stronger when we see that TGG has studied at least some intersentential relations all the while pretending that they are intrasentential. Thus pronominalization and NP definitivisation have received attention in TGG with no acknowledgement of the fact that these processes are sensitive to the identity of NP's occurring in contiguous but distinct S's. At the same time TGG has ruled out as not falling within the purview of its theory some other important intersentential relations (e.g., those signalled by others, therefore, such, etc.). Here again TGG manages to maintain its image of consistency only

because of the inconsistency in the concept and use of the term 'sentence'.

4.1.4.1. In fact, it is quite evident from the differences between the TG treatment of pronominalization on the one hand and reflexivisation on the other, that TG itself recognizes the former to be an intersentential relation. That is to say, reflexivisation rule is stated in terms of the identity of NP's within the same simplex sentence while pronominalization rules refer to NP identity extending across simplex sentence boundaries. Yet it is not the case that pronominalization is restricted to one and the same surface syntactically independent sentence. In fact, more often than not, a pronoun refers to a noun in an immediately preceding S where the preceding S is syntactically separate. Thus, while TGG may correctly predict pronominalization phenomena within the same surface sentence, it fails even to recognize as linguistically significant, pronominalization across surface sentence boundaries, though the principle involved is one and the same in both cases, viz., identity of reference. The culprit: the confusion surrounding the term 'sentence'.

4.1.4.2. TG theoreticians have, whenever necessary, made use of textual notions in their argumentation. Thus Chomsky (1971) makes use of the notion 'natural response' while trying to establish his thesis that focus and presupposition can be taken care of by a semantic interpretation component sensitive to the surface structure of sentences. Chomsky

argues that given (45) (Chomsky's numbering)

- (45) $\left\{ \begin{array}{l} \text{was it} \\ \text{it wasn't} \end{array} \right\} \left\{ \begin{array}{l} \text{an ex-convict with a red SHIRT (a)} \\ \text{a red-shirted Ex-CONVICT (b)} \\ \text{an ex-convict with a shirt that is RED (c)} \end{array} \right\}$
- that he was warned
to look out for.,

only (50a) viz.,

- (50a) no he was warned to look out for an ex-convict with
a red TIE

can be a natural response, and not (50b) and (50c).

- (50b) no, he was warned to look out for a red-shirted
AUTOMOBILE salesman.

- (50c) no, he was warned to look out for an ex-convict
with a shirt that is GREEN.

According to him, the reason why they aren't natural responses to (45) is that they don't preserve the presupposition of (45). This implicitly amounts to recognizing that maintenance of presuppositions is a factor that contributes to naturalness of discourse. Inconsistency is the result when recognition such as this does not lead to a full-blooded treatment of 'presuppositional binding' of discourse or a recognition of the naturalness of the domain of discourse, of which naturalness of response is just a special case.

4.1.5. Our argument thus far has been that inasmuch as TG has taken some non-intra-simplex-sentential relations into consideration, it is inconsistent for it not to consider all intersentential relations. The reason is that no principled distinction can be drawn between two clauses

occurring within one surface S and two surface S's related by immediate precedence and succession. Thus, by explicitly recognizing text as legitimate data for linguistics, TG can rid itself of the inconsistency arising from its non-recognition of the essential sameness of the principles involved here.

Moreover, it cannot be maintained, except at the cost of theoretical double-talk, that matters like contrastive stress, topic-comment relations, clefting and pseudo-clefting, not to speak of pronominalization, and NP definitivisation, are matters relating to purely sentence grammars (cf., Chafe, 1976; Keenan and Schieffelin, 1976). But more about this later.

4.1.6. Probably faced with mounting criticism on the ground of their refusal to deal with textual relations, TG theoreticians of late have started talking about the inherent legitimacy of sentence grammars in contradistinction from discourse grammars. Exemplifying the distinction between the two, Chomsky (1977) writes:

... in John expected him to leave, John and him cannot be coreferential. Take a more complex case. I seem to John to like him. Here John and him can be coreferential, but in John seems to me to like him, John and him cannot be coreferential. In this case it seems that we are dealing with rules of sentence grammar, which satisfy the general conditions that govern such rules

... All this belongs to the first category of anaphoric relations.

In the second category we have the problem of determining the reference of words such as the others or even he in sentences of the type He has arrived, some reacted well, but the others were angry It is NOT grammatical principles (or more precisely the principles of sentence grammar), which govern the relations of these pronouns to their antecedents or intended referents. There are many other conventions in discourse beyond the rules of sentence grammar But these conventions of reference are not part of grammar. To express these would require a richer theory integrating a number of cognitive states (Chomsky, 1977).

The circularity of the argument should be obvious. Here Chomsky assumes the reality of the distinction between grammatical rules and conventions of reference in discourse while trying to illustrate the very same distinction, i.e., that between sentence grammar and discourse grammar. In other words, the same proposition that is sought to be proved i.e., that only sentence grammar is, and can be, the real grammar is also adduced as a premise. The entire argument is thus trivialized into something like, "conventions of reference in discourse are not part of grammar because grammar is essentially sentence grammar, and grammar is essentially sentence grammar because conventions of discourse are not part of it".

But it is definitely highhanded to assert, even by implication, that it is not the business of grammar to rule out (i.e., it is not in terms of grammatical principles that native speakers do so) a string like, "Some reacted well, but the other was angry", while accepting, "Some reacted well, but the others were angry". To top it all, Chomsky argues

that, in order to take care of rules governing the use of such expressions as other, he, etc., we need "a richer theory integrating more cognitive states", with the implication that such a theory would be somehow undesirable or difficult to build, or both. On our formulation, the theory will necessarily be richer, but it will not require reference to any cognitive state over and above what is currently made use of; all that we need is a richer concept of competence instead of the impoverished one handed down to us.

Moreover, the theory will lay itself open to the charge of inconsistency if it does not make clear whether it is a grammar of simplex sentences or complex sentences. If it opts for the first, it cannot escape being trivial, and if opting for the second, it is admitting having to deal with intersentential relations. Making the second option and not the admission of fact that goes with it will only prove the charge of inconsistency at the core of TGG which it so far has been able to cover up with the confusion surrounding the term 'sentence'.

All this logical legerdemain is necessitated by the fact that the theory has to operate with the early restriction of its data to isolated sentences. A theory of texts, by openly admitting the linguistic validity of intersentential relations and by giving a definition to the term 'sentence' - and of course by sticking to it -, steers clear of the Scylla of inconsistency and the Charibdeys of circular argumentation.

4.1.7. Metascientifically speaking, TG can be seen to be based on a realist theory of epistemology: that is to say, it claims that its theoretical terms are not fictions or pure constructs but stand for actual entities. A realist meta-theory thus contends that the scientific worth of any theory constructed within the realist framework rises in proportion to the degree of its falsifiability, or, in other words, the richness of the empirical content of its theoretical terms. This is so because the richer empirical content of terms implies more predictions about data and consequently more areas or instances where the theory is liable to be proved false. By implication, then, any erosion in the empirical content of its terms means impoverishment of the theory as a whole.

Now we shall see how some of the crucial theoretical terms of TG are drained of their potential empirical content solely because of the restriction of its data to sentences.

4.1.7.1. As one advantage of a transformational grammar over purely phrase-structure grammars, it has been pointed out that the former allows 'context' sensitive mechanisms like strict categorization rules, selectional restrictions and transformations triggered by specific structural descriptions etc., whereas the latter doesn't. However, the notion of "context" here is drained of most of its possible or potential empirical content. It doesn't involve anything more than an intra-phrasal (i.e., between an adjective

and a noun in an NP or between a verb and an object noun in a VP), or an interphrasal relation (as between a subject NP and its VP). The communicative competence theorists went to the other extreme and sought to bring under the notion of context everything from pragmatic to socio-cultural variables that bear on linguistic performance. What was lost sight of was the textual or inter-sentential context which represented at once a liberation from the constriction of the earlier concept and from the immoderate ambition of the other. In other words, TGG, as well as some of its critics, failed to understand the 'linguistic' significance of the textual context and how it could be used to explain various facts about language. For example, why the following sentences cannot occur as conversation initiators:

1. What else do the policemen know?
2. All others can stay back.
3. Did he do that to him?

In fact, to determine whether 3 is grammatical or not, i.e., whether it is derived from 4 or 5.

4. Did NP_i do that to NP_j ?
5. Did NP_i do that to NP_i ?

requires fixing the referents of the pronouns, which can be done only with reference to the context in which 3 is uttered. Our contention is that in TGG, "context" is not broad enough to include such inter-sentential relations and, consequently is rendered empty of much of its empirical substance.

4.1.7.2. 'Competence' is defined in TG as a fluent native speaker's ability to produce and understand an infinity of sentences. If we take 'sentences' to mean isolated sentences, (which, in the absence of any clear indication to the contrary, we are surely entitled to do), we can at once see that it suggests something intuitively wrong, viz., that there is no necessary relationship between 'fluency' and the inter-relations among sentences. Actually, fluency is nothing but the facility and ease with which a native speaker of a language produces and understands sentences related to one another in many ways. Enkvist observes, "... fluency is obviously a textual feature including intersentential linkages rather than a characteristic of an individual sentence" (Enkvist, 1978). In fact, if constrained to produce speech in which no two sentences should have anything in common, it won't be surprising to find most fluent speakers - probably professional linguists apart - turn blabbering idiots. The sheer artificiality of uninterrelated sentences is evident from the fact that conglomerations of such sentences can be found only in grammar books meant for pattern drilling. Halliday makes the point that the native speaker's ability to distinguish between text and non-text is his real linguistic ability. He says,

The speaker's command of his language includes an awareness of the difference between text and non-text - lists of words, or random sets of sentences: Normally he will assume that what he hears or reads is text, and he will go to great lengths to justify his assumption and ensure that

communication is taking place. This assumption is a functional one, it rests not so much on recognizing words and structures as on recognizing the role that language is playing in the situation. And the language will be recognized as playing some role only if it is acceptable as text [emphasis mine TC] (Halliday, 1974).

Not to build the implications of this observation into the definition of the most important theoretical term in TGG is to impoverish it unnecessarily. Competence, as defined by TGG, is not all that is there to the actual human linguistic competence. Competence is the ability to produce and understand an infinity of sentences and to effect and perceive relations across them. So long as the latter ability is not attributed to it, the term competence remains so much the poorer in empirical content. Text theory offers the most effective antidote to the empirical anaemia that characterizes the concept in classical TGG.

4.1.7.3. The TG practice of equating creativity with the novelty and numerical infinitude of sentences produceable by a native speaker, while essentially correct, is not the whole truth about creativity. It divests the term of much of its empirical content and philosophical interest, while the supplementary argument based on there being no longest sentence of a language invests it with an aura of forced fidelity to facts. Besides, the attribution of the fact that inordinately long sentences are a rarity in language to such psychological factors as memory limitations, and not to any constraint inherent in language as such seems very

strange and inconsistent with the theorist's professions elsewhere to the effect that language is a property of the mind, is genetically inscribed, and that linguistics is a branch of cognitive psychology. If there are constraints on the mind that prevent the production and processing of very long sentences, there should be analogous constraints in language structure as well. In other words, what is incoherent, i.e., what is impossible for the mind to process, should be ungrammatical in the language, though the converse need not hold. So it is either the case that the longest sentence argument goes against the grain of TGG's claims for biopsychological bases of language, or its concept of that which this argument is used to support and elucidate is incorrect. So creativity has to be redefined in a way consistent with TGG's general theoretical orientation, viz., rationalist philosophy, cognitive psychology and realist epistemology. Such a definition of creativity would take into consideration the fact that creativity ensures novelty or unpredictability of utterances without having to sacrifice coherence or understandability. Thus novelty of utterances is not absolute. That is to say, creativity can be characterized only with reference to constraints; and, constraints stated in terms of the textual context provide the most wideranging terms of reference and are consonant with the integrative principles of cognitive organisation. Moreover, creativity demonstrated in terms of the essential open-endedness of texts - there is no 'last text unit' to any text - is intuitively more

satisfying than creativity thought to be evidenced by an assumption of the impossibility of the longest sentence in a language.

4.1.7.4. One characteristic that TGG has prided itself on is that, with its emergence, linguistic theory has finally broken out of the paradigmatic barrier that had constrained the taxonomic grammars of the structuralist theory. That is, the shift of emphasis from 'arrangement' to 'process' represented a liberation from the confines of paradigmaticity to the expanse of syntagmatic phenomena. Yet, closer examination will show that the case for celebration is not very strong and that paradoxically enough, the paradigmatic canker still gnaws at the core of TGG. For the sentence is still the highest syntagm. This much of syntagmaticity has to be granted to the structuralists as well. After all, the sentence provided the upper bound within which the structuralists counted combinatorial possibilities and potentialities of occurrence and they determined form classes on the basis of these. Any theory of grammar that stays confined to sentential boundary, then, will be liable to the charge of being paradigmatic. Daneš hits the nail on the head when he says, "We would like to emphasise that the system of sentence patterns and the corresponding rules account for one partial aspect of the field of syntax only, viz., that which perhaps might be called 'syntactic paradigmatics'." (Daneš, 1966).

TGG's concern with relationships like synonymy and paraphrase and with the structural sameness underlying a statement and its negative and interrogative forms is also of no help in absolving TGG of this charge because these relations are also essentially paradigmatic. Only a grammar that seeks to account for the linear dynamics of communication in progress in terms of the conditions for the combinability and juxtaposability of sentences can hope to be truly syntagmatic.

4.1.8.1. The temptation to effect a fusion between Chomsky's characterisation of linguistics as a branch of cognitive psychology and his concept of explanatory adequacy and thereby enhance the conceptual richness of both the ideas is irresistible. We shall state our thesis thus: The greater the fit between the terms, definitions, and explanations of linguistic theory and those of other epistemological disciplines, the greater the explanatory adequacy of the former. In other words, if linguistic theory is harmoniously integrated into a general theory of knowledge, we can assert with justification that linguistics has finally contributed to the understanding of the cognitive structures of man. In any case this is the endeavour of all non-behaviouristic pursuits of the study of language. Our formulation so far, we hope, doesn't conflict with - though it may be an original extension of - the well-known policy pronouncements of TG theoreticians. The rub comes when it is pointed out that the sentential constraint

placed on linguistic inquiry will act as an impediment in our progress towards the stated purpose.

4.1.8.2. Cognitive psychologists and workers in Artificial Intelligence have for long been complaining that sentences are very inadequate as units of linguistic analysis, especially for the purposes of characterising the capacities underlying natural language understanding. Thus Schank and Abelson express their dissatisfaction with the state of affairs in the following words, "Early work in natural language understanding (e.g., Woods, 1970; Winograd, 1972; Schank, 1972) was concerned almost exclusively with individual sentences" (Schank and Abelson, 1977:22). They then speak enthusiastically about the "shift of attention towards whole texts (e.g., Wilks, 1973; Rumelhart, 1975; Schank, 1975)" (ibid). Winograd also notes a "a great deal of excitement in linguistics, cognitive psychology and Artificial Intelligence today about the potential of understanding discourse" (Winograd, 1977:63). Later he equates the study of discourse with "understanding the cognitive structures and processes of language users" and distinguishes his approach from those of other "text-based studies which concentrate on the structural form of the texts or dialogues that are produced and comprehended". His own point of view is, "... the text is a concrete trace of the processes [of comprehension and production: TC] and its structure needs to be understood in terms of the processing structure" (Winograd, 1977:64). Winograd's words represent

probably the strongest claim for psychological reality of structures uncovered through linguistic analysis and put it in no uncertain fashion that, unless the objects of analysis are texts, the claim for psychological reality cannot even be entertained. This goes well with our contention that purely sentence-oriented linguistics will not be able to make any significant contribution towards an understanding of the cognitive structures of man. What is more dangerous is that any contribution from a sentence-bound linguistics will be distorted in perspective. In order to keep open the possibility of a meaningful synthesis between the findings of linguists and those of cognitive scientists, linguistics has to concern itself with texts and not sentences in isolation, because it is the former that reflect truly human cognitive capabilities. Our contention thus far cannot be dismissed as an artificial and unwarranted extension of the 'view of man' underlying transformational linguistic theory whose pioneer pronounced in his earliest programmatic statements that linguistics should be able to contribute to an understanding of the human mind. The study of texts is not only harmonious with the research programme as outlined by transformational theory but is inevitable if it seriously entertains hopes to accomplish the goals that it has set for itself. Moreover, any refusal to deal with texts will necessarily lead to the suspicion that transformational theory persists in a perverse fashion with a serious mismatch between its profession and its practice.

4.1.9. Everyone acquainted with the chapter in the history of ideas that records the emergence of transformational generative grammar knows that rationalism provides the philosophical inspiration behind the theory. Thus Chomsky remarks, "The eye perceives, but the mind can compare, analyse, see cause and effect relations, symmetries and so on, giving a comprehensive idea of the whole, with its parts, relations and proportions" (Chomsky, 1975). Further on, he relates his conception of mind and its organising principles with that of the rationalists by quoting with great approbation Prof. Lovejoy's account of how the latter considered as extremely important the "relational ideas or categories, which enter into every presentation of objects and make possible the unity and interconnectedness of rational experience" (Chomsky, 1975).

It is clear that TG theorists, who claim intellectual descent from 17th century rationalists, acknowledge the breadth and validity of notions like 'unity' and 'interconnectedness'. These notions, according to the rationalist belief, are necessary to account for the way man organizes his infinitely varied experiences. Unity has to be understood as a characteristic of organized experience and as derived directly from man's ability to perceive interconnections among the various parts of experience. 'Unity' in theory thus corresponds to 'interconnections' in data. It is this close parallelism between rationalist notions and the

linguistic phenomena which has prompted us to define 'text' as the proper object of linguistic inquiry.

What a theory of text grammars attempts to show is that it is the interrelations between distinct sentences which are responsible for the unity and coherence of extended discourse and that a native speaker's ability to effect and perceive such relationships is a very real and vital part of his linguistic competence. Without positing such a 'textual competence', linguistics cannot hope to account for the facility with which man organizes the bewildering variety of his linguistic experiences. It can be easily seen that this is a faithful translation into purely linguistic theoretic terms, of the terms of the rationalist theory of mind. That is to say, the terms of a text theory, e.g., 'coherence' and 'textuality' or 'cohesion' are direct correlates of the rationalist terms 'unity' and 'interconnectedness' respectively. It is because of this perfect identity between the significant notions of text theory and rationalism that we claim that defining texts as its legitimate data goes well with the philosophical position espoused by TG. Moreover, any reluctance to do so will render TG open to the accusation of intellectual schizophrenia or philosophical inconsistency. We are pressed into making statements with such rhetorical vehemence because of the incomprehensible incongruity between the fervour with which TG flaunts its filial links with rationalism and the haste and distaste with which it dismisses text or discourse from the purview of linguistics.

Thus, for example, Katz and Fodor observe "Grammars seek to describe the structure of a sentence in isolation from its possible settings in linguistic discourse (written or verbal) or in non-linguistic contexts (social or physical)". Macneill takes the same position when he says,

Let us think about a single sentence. By so restricting our attention, we eliminate discourse, dialogue and the exchange of ideas, all of which are important questions for understanding the development of language. In return we shall gain relative simplicity without losing an accurate vision of linguistic knowledge [emphasis mine: TC] (Macneill, 1966).

Apart from the unwarranted assumption that the 'vision of linguistic knowledge', attained without reference to 'important questions for understanding the development of language' will be an accurate one - which itself is, in our opinion, incongruous with TG's wellknown theoretical positions in this regard - the theorist is also guilty of taking a stand that conflicts with the theory's claims for a rationalist lineage. A theory of texts just does not get into such a philosophical dilemma.

We have so far endeavoured to show how, by redefining its data as 'texts', and by treating 'sentence' as a purely theoretical term, TG can remedy the rift between its theory and practice, remove its internal inconsistencies, enrich the empirical content of its terms, as well as invest its claims for conceptual consanguinity with other epistemological disciplines with greater conviction.

look beyond the sentence boundary that the very need for such unproductive arguments arises. With sentences isolated from their natural contexts, the issue of unacceptability cannot even be relevantly raised, let alone resolved. Thus the impossibility of achieving any uniformity of opinion in this regard is built into the theory.

In contrast, text theory can characterise acceptability in a satisfactory way by equating it with integratability of sentences into texts. So long as a sentence can be integrated into a text, i.e., it can form a part of a coherent whole, it is acceptable, otherwise not. Acceptability or unacceptability is not, and cannot be, a property of any isolated sentence, but is a function of its potential relations with other sentences. We should remember that even in the sentential framework, the unacceptability of a string is derived from the unwarranted collocation of words and not from any inherent unacceptability of individual words: in fact it makes no sense to speak of unacceptability at the word level. Similarly for sentences.

Thus, in the controversy about "My tooth-brush is pregnant", it is said that though this sentence as such is unacceptable, in the context, "I dreamt that ____", it becomes perfectly acceptable. To say this is to admit that "My tooth-brush is pregnant" forms a coherent whole or text with the sentence "I dreamt". It would be inconsistent now for the linguist to agree to one contention viz., that "I dreamt that my tooth-brush is pregnant" is acceptable and not to

recognize the fact that its acceptability is the result of the interrelationships between "I dreamt" and "My tooth-brush is pregnant", or, more specifically, because the latter as a complement of the immediately preceding S is a linguistically well-formed string. Note also that the acceptability is not adversely affected even if the originally unacceptable sentence remains syntactically independent. Thus,

I shall tell you a tall story. My tooth-brush is pregnant.

is perfectly acceptable.

Our contention thus is that acceptability can only be properly understood in terms of textuality, just as it is understood in terms of grammaticality (i.e., grammar including selectional restrictions) in the Standard Theory. Abnormality lies not in isolated sentences but in the linguist's practice of ripping them off from their legitimate linguistic contexts or in not providing them with a context. McCawley (1979a) summarises our argument effectively thus:

It is quite easy to construct sentences that sound incoherent when presented out of context but which are quite normal in specific contexts. For example, Morgan (1973) has noted that sentences such as 1a make no sense in isolation but are perfectly normal when used as the answer to a question such as 1b.

1a. Kissinger conjectures poached.

1b. Does anyone know how President Ford likes his eggs? (McCawley, 1979a).

The most convincing proof of the validity of equating acceptability with integratability into texts is provided by the way John Hollander establishes the

meaningfulness of Chomsky's famous non-sense string.
Hollander's postscript to Harman (1974) reads;

Coiled Alizarine

Curiously deep, the slumber of crimson
thoughts,

While breathless, in stodgy viridian
Colourless green ideas sleep furiously.

We see that this poetic text, by deliberately
distorting our concepts of chromatic compatibility and possi-
bilities of colour-substance association, establishes a system
of its own, and integrates the given sentence, which exhibits
identical distortions, into that system. Colourless, green
ideas can sleep, and their sleep can be furious, in the
ruddy regions of psyche.

Needless to say, the concept of acceptability is no
bone of contention in text theory as it is with a purely
sentence oriented grammar.

4.2.2. Ambiguity

Arguments similar to those given above also apply
to the TG treatment of ambiguity, supposedly yet another
thorn in the flesh of linguistic theory. Most instances of
ambiguity cited are potential and not real - this by the
linguists' own admission. Chomsky himself has said in so
many words that most of the times native speakers would not
detect any ambiguity in sentences that are ambiguous according
to the linguist. Yet, disambiguation, and, by implication,
ambiguity, are elevated into crucial concerns in a theory
that seeks to formalize the intuitions of native speakers.

Lewis Carroll caused at least a few chuckles with his "walking with a stick" and "walking with Alice", where the very purpose is to create humour by suggesting an outrageous semantic identity by exploiting the morphological identity of the two 'withs'. But when a serious linguistic theoretical point is sought to be established, we need something more than what is offered by

The shooting of the elephants was terrible in which one of the linguist's readings is a picture of the pachyderms performing with their Smith and Wessons. The sentence actually is not ambiguous in context: there will be no structural synonymy whatsoever when it follows something like,

All the animals performed marvellously in
last night's circus show, didn't they?

In this context, the sentence just cannot be interpreted as a conservationist's criticism of the annihilation of elephants. The fault, once again, lies in the linguist's practice of constructing isolated sentences and trying to base a theory of language on them.

This suggests a totally implausible conception on the part of linguists, of how language is represented in the mind and realized in speech. It seems as though the linguists consider sentences as constructed, numbered, catalogued, and hung in a memory space disinfected for textual or pragmatic information and drawn from there at random and again with no concern for contexts. Needless to say, such a view

conflicts irreconcilably with the TG notions of the novelty and creativity of language use.

And yet it is such a view that lies behind the TG treatment of both acceptability and ambiguity. This view makes possible the introduction of a metaphysical conceit like 'the same sentence' into linguistic theory. On our view, no two sentences are the same, except for automatised or formulaic expressions like "How do you do?". To think otherwise is to hold the opinion that two sentences are the same if they happen to sound alike. In our system, however, no two sentences are the same even if they sound alike, for they will have different structural and referential affinities with sentences that precede and follow them. Structural synonymy is thus a myth and goes against the grain of other, more fundamental assumptions of TG, e.g., that the probability of someone uttering the 'same' sentence again is almost zero. We may use sentences that sound alike again and again, but we can hardly be charged with repeating one and the same sentence, i.e., with lack of novelty or creativity. Each sentence is born out of the dialectics of linguistic creativity and contextual constraints (manifested as referential relations) and communication progresses through the ongoing process of such creation. Bergson stated more than a trivial truth when he said you can never step into the same river twice.

It is the artificiality of the burden that linguistic theory is carrying on account of its entanglement with

ambiguity that comes in for a severe chastisement at the hands of Weinreich. He writes,

The preoccupation of Katz and Fodor with disambiguation appears to be an entirely unjustified diversion of effort. Semantic theories can, and should be, so formulated as to guarantee that deep structures (including their lexical components) are specified as unambiguous in the first place (Weinreich, 1971:311).

On our view, the fixing of the referents of elements within individual sentences (e.g., pronominal forms) in terms of information in their larger textual contexts is one way to guarantee that deep structures are specified as unambiguous. Given a mechanism at the deep structural level, to refer to intersentential links, ambiguity or structural synonymy will be non-existent. Robin Lakoff presents the problem and the solution thus:

Suppose you overhear the sentence "Visiting relations can be a nuisance" in isolation. You have no way of knowing whether the speaker is talking about relatives who visit, or the act of visiting relatives, but if the hearer has also heard prior discourse, and, if, for example, this discourse is concerned with a discussion of the properties of relatives, and when relatives were a nuisance, the reader is able to disambiguate the sentence by linguistic means emphasis mine: TC (Lakoff, R., 1972

Here, the use of the term, 'disambiguate' is unfortunate and is occasioned by an unwarranted transition from the verb 'overhear' to the agentive nominals 'the hearer', and the absolutely lax 'the reader'. On our view, the addressee is able to process the sentence without any difficulty and without detecting even a possibility of ambiguity. The overhearer of just that stretch may be puzzled

and in a quandary as to how to interpret the sentence. But overhearers can be uncertain about almost every other sentence they perceive in isolation. A grammar records the competence not of a speaker-overhearer but of a speaker-hearer, or, better still, of a speaker-addressee. Sticking to this terminology strictly with an awareness of its import would have helped Lakoff phrase more happily what is essentially a correct conclusion. If linguists revise their concepts of sentence production and comprehension so as to view these as not fully finished products but as building blocks for text formation and processing, ambiguity will be taken care of automatically.

Ambiguity based on word synonymy (of the Lewis Carroll variety we mentioned earlier) and deliberate ambiguity of the poetic kind are a different matter altogether. In these cases, textual relations themselves are manipulated intentionally in such a way as to skew the cross-referential network of texts, thus making them more difficult to process. However, ambiguity of this type can also be defined as a function of the potential integratability of a given sentence into two or more different texts.

It has been our endeavour to show that there exist rigid and stateable rules governing cross-references in texts and, these rules, if properly applied, lead to unambiguous constituent sentences in texts. Thus, for example, a textual connective like 'but' between

All the animals performed marvellously in
last night's circus show

and,

The shooting of the elephants was terrible
will specify that the relationship of the latter to the former
is one of contrast, i.e., the latter is a comment from a
connoisseur of matters relating to the marksmanship of
mammoth and not a conservationist's complaint.

Suffice it to say that a text, being coherent by
definition, gives no scope for ambiguity. It is difficult
to think of a sentence forming a coherent whole with other
sentences and yet being ambiguous, i.e., having synonymous
structural and referential relations with elements of
sentences that precede and succeed them.

4.2.3. The myth of deep structure pronouns

The usual treatment of pronouns in transformational
grammar, especially in the interpretivist framework, is to
make use of a pronominalization transformation that converts
the second occurrence of a noun in the same sentence into a
pronoun. Thus Bach observes: "Personal pronoun anaphora
should be handled by a pronominalization transformation that
substitutes a pronoun for a NP that is identical to an ante-
cedent NP - identical syntactically, lexically and referentially"
(Bach, 1970). In the absence of any indication as to the
scope of the search for the identical antecedent, we surmise
that, given the sentence-bound nature of the framework within

which Bach works, the search ends at the subject of the main clause as in our example below:

John_i wants to take his_i girlfriend out for dinner tonight.

The "he" of this example is generated from identical NP reference as indicated below.

John_i wants to take John_i's girlfriend out for dinner tonight.

This approach is necessarily limited because it is incapable of accounting for pronominalization working across surface sentence boundaries. But more about this later.

TG proposes, for sentences like the following,

He bought a new hat yesterday.

the existence of what are called deep structure pronouns, i.e., pronouns which it is not the business of grammar to specify the antecedents of. The antecedents purportedly are given by 'conventions of reference' which do not form a part of grammar. Illustrating such a point of view, Chomsky says,

If I say, while showing you this photograph, He is a good kid, that would be quite correct because it is perfectly acceptable to present this boy to you in this way in this context But these conventions of reference are not part of grammar (Chomsky, 1977).

This alone would be alright but for the fact that Chomsky equates the 'he' of the photograph situation with the 'he' of "He has arrived", meaning thereby that, even in the absence of demonstrable referents, it is not a function of grammar to specify pronominal antecedents. They are just there and the grammar is not affected by their presence.

This treatment of pronouns is defective on at least three grounds. One, it is theoretically expensive to have two sets of pronouns identical in every respect except in the way linguists seek to generate them in the deep structure. Two, the idea of DS pronouns militates against intuition, and, three, it doesn't go well with the linguist's equation between semantic input and logical form. We shall deal with the last two points here and reserve the first for treatment elsewhere.

4.2.3.1. The very concept of DS pronouns is counter-intuitive. The impossibility of a sentence like,

He bought a new hat yesterday

to function as a conversation initiator is a clear indication of our contention. Thus the natural response to this sentence, if uttered in a text-contextual vacuum, will be most likely a metalinguistic one to something like the following effect.

Who are you talking about?

which is nothing but an urging to the speaker to establish the antecedent of the pronoun he has used. The best example of the sheer senselessness of an all-pronoun discourse is provided by Lewis Carroll in his Alice in Wonderland. The following poem is presented as evidence for the Knave's guilt in the court of the Spade-King.

They told me you had been to her,
And mentioned me to him:
She gave me a good character
But said I could not swim.

He sent them word I had not gone
 (We know it to be true):
 If she should push the matter on,
 What should become of you?

I gave her one, they gave him two,
 You gave us three or more:
 They all returned from him to you,
 Though they were mine before.

If I or she should chance to be
 Involved in this affair,
 He trust to you to get them free
 Exactly as we were.

My notion was that you had been
 (Before she had this fit)
 An obstacle that came between
 Him and ourselves and it.

Don't let him know she liked them best,
 For this must ever be
 A secret, kept from all the rest,
 Between yourself and me.

As is quite clear, all the subject and most of the object positions are filled by pronouns whose reference cannot be established. The verse is unsigned, therefore the referent of the "I" is unknown. There is no salutation and thus it is not clear who the "you" stands for. Worst of all, there is no indication whatever as to the referents of "he", "she", "they", and "it". Alice speaks for all of us when she says, "I don't believe there is an atom of meaning in it". Since we know where in the book the verse occurs, the nature of the book, the nature of the author as well as the purpose of the whole book, we are not surprised and we revel in the confusion created by it. But the linguistic facts remain clear. When the King wants to use the poem as evidence for the Knave's guilt, i.e., when he tries to force a meaning

on it, what he does is to find referents for the pronouns; starts for "they", the Knave for the "I" and stops short only when he finds that "the words don't fit the queen" i.e., that the "she" cannot stand for the queen because that "she" had had fits while the queen never had any. It would be to suggest the obvious to say that the meaninglessness of the poem is a result of nothing but the emptiness of the pronouns. Deliberate use of empty pronouns is all right coming from Lewis Carroll in a verse and book of this kind, but would be considered downright perversity in any other context.

4.2.3.2. The interpretivist concept of deep structure pronouns appears strange from yet another point of view. Recall that the interpretivists consider 'logical form' of sentences as the input to the semantic interpretation component and characterise this form in terms of symbolic logical notation. Yet it is the case that logic knows no pro-forms. The 'such that' phrase that accompanies the introduction of a variable in an existential proposition is a full specification of the value or referent of that variable, and, in a universal proposition the antecedent always specifies the class-membership of the variable in question, i.e., specifies its referents. In fact, such class-membership is the condition for the consequent. Thus,

He is a friend of mine

can be represented in logic only as

There is an x, such that x is a man and
x is my friend.

or, equivalently,

$$(\exists x) (Mx \ \& \ Fx)$$

and,

All teachers are friends

is symbolized as

$$(x) (Tx \longrightarrow Fx)$$

For any x, if x is a teacher, then x is a friend.

These logical means, we contend, are direct counterparts of the linguistic "fully specified nouns" which necessarily underlie all instances of pronouns. In Chomskyan terms, we may say that pronouns are the 'traces' left by fully specified noun phrases. It goes without saying that traces by themselves, i.e., with no definite means of indicating what they are traces of, will be empirically empty. Text theory, by refusing to admit the possibility of deep structure pronouns, and by claiming to be able to trace all pronouns to their linguistic antecedents, takes a wider range of facts to account for, and also gives more intuitive characterisations of notions like "logical form", "traces" etc.

4.2.3.3. In this section we shall discuss Keenan (1976) and we hope to demonstrate how unwillingness to boldly embrace the text theoretical contention that there can be no deep structure pronouns leads to contradictions in the work of an otherwise cautious and clear-sighted linguist.

First, Keenan gives the definition of the concept 'basic sentence' in a language in the following way.

4 (Keenan's numbering)

For any language L,

- a. a syntactic structure x is semantically more basic than a syntactic structure y if, and only if, the meaning of y depends on that of x. That is, to understand the meaning of y it is necessary to understand the meaning of x.
- b. a sentence in L is a basic sentence (in L) if, and only if, no (other) complete sentence in L is more basic than it. (Keenan, 1976)

What has been defined here is 'basicness' and not sentence at all. Thus, 4a, which makes no mention of the term 'sentence' can be used to identify the basicness of structures like the following.

Keenan's paper MBT Keenan's paper on subjects
MBT Keenan's paper on subjects in English MBT Keenan's
paper on subjects in English and Swahili.,

(where MBT represents the relation 'more
basic than')

But Keenan does make use of a definition of sentence further on. He says,

Concerning 4b, the b-sentences in any L are defined to be the maximally basic structures having the category "sentence", although we do require that a sentence be in the set of b-sentences if the only other sentences more basic than it are "too context dependent" for their meaning (that is, they do not express a "complete thought"). The intent here is to rule out cases where the only NPs occurring in b-sentences would be pronouns. Thus in many Ls, if not in English, it is arguably the case (Keenan, 1972a) that pronominal sentences like he hit him are more basic than ones like John hit Bill. Compare e.g., 5a and 5b from Swahili

5a. a— li— m— piga
 3sg past 3sg hit
 human human
 subj obj
 "he hit him"

b. Juma a— li— m— piga Faru
 Juma he— past— him— hit Faru
 "Juma hit Faru"

Sentence 5b differs in meaning from 5a solely in that the reference of the pronominal elements in 5a is made more specific. To determine e.g., the truth of 5b we must first determine the reference of the pronominal elements as Juma and Faru, and then determine that 5a is true. So we can't really understand the meaning of 5b without being able to understand that of 5a, so 5a is plausibly more basic than 5b. Nonetheless 5a is "incomplete" in that it does not really tell us who is being talked about. Plausibly then no complete sentence in Swahili is more basic than 5b, or 5a, so both of these are among the b-sentences in Swahili. (ibid)

Obviously the argumentation faithfully follows the principle of taking away with one hand what is given with the other. The failure to appreciate that it is a universal grammatical principle to generate pronouns on the basis of identity with antecedents makes it impossible for Keenan to carry conviction. The apparent structural basicness exhibited by sentences with only pronominal NPs is confounded with semantic basicness and the attempt to harmonise the two leads to each cancelling the other out, though seemingly the enterprise is saved by the admission of both the sentences as basic. But the salvaging is only superficial, for by using the disjunction '5a or 5b' and by admitting both sentences as basic in Swahili, Keenan has clearly abandoned the definitional criterion of basicness - which was essentially semantic - given earlier, and with no concern for how it

would cut at the root of his purpose viz., giving a 'universal definition of 'subject'.'

Again, it is the inability to dispel the demon of deep structure pronouns from the regions of linguistic argumentation which has led Keenan to make the absolutely indefensible and counter-intuitive claim that we can't really understand the meaning of 5b without being able to understand the meaning of 5a or that in order to determine the truth of 5b we must first determine the truth of 5a by identifying the referents of the pronominals, i.e., by looking at 5b. The circularity, we think, is obvious.

The paper is more perplexing on the ground that Keenan is not totally unaware of the real nature of pronouns. Thus he himself admits that the only real difference between 5a and 5b is that 5a is too 'context dependent', i.e., discourse governed. In other words, it is a text unit dependent for its interpretation on a text unit that has preceded it. The 'thought' contained in it requires for its 'completeness' reference to thoughts presented earlier in the text. The untenability i.e., the wrong-headedness of Keenan's truth functional and/or semantic analysis of 5a and 5b stems from his refusal to recognise the text-bound nature of 5a explicitly and reluctance to depart from the standard theoretical practice of bestowing full independence on text bound units like 5a on the strength of their seeming structural independence, even against his own better judgements intimated, however vaguely, through his talk about the incompleteness and

context-bound nature of utterances like 5a. He tenaciously clings to the basicness of pronouns, a derivative of the myth of deep structure pronouns, and runs straight into infelicitous and non-availing arguments. Out goes the baby of basic sentence argumentation along with the bathwater of text grammatical notions.

4.2.4.1. On "too" and "either"

Georgia Green's paper on this topic to the Fourth Regional Meeting of the CLS was aptly titled: "On too and either and not just on too and either either". It contained insights that had implications for more things than just for 'too' and 'either', and which, if carried further could have led to questioning the limitations of sentence bound grammatical inquiry and laid the foundations of text based linguistics.

Green's major endeavour is to extend Wierzbicka's notion of the requirement of a common denominator between conjoined NP's to that between conjoined clauses. She gives the following examples.

(10) (Green's numbering)

St. Louis is not in New York, and New Orleans
is not on the east coast either.

(11) Ho Chi Minh is responsible for a lot of deaths,
and LBJ is no saint either.

(13) Barb is seventeen, and Wendy is old enough to
have a driver's license too.

Given the assurance that these sentences are grammatical, even one who is totally ignorant of American geography, international politics, and US laws governing driving licenses

can safely assume that New York is on the east coast, that LBJ is responsible for a lot of deaths and that driver's licenses are issued only to those who are seventeen or above. Green accounts for this fact in the following way. She says,

Sentences (10) through (12) involve some kind of pronominalization of predicates, and make assertions involving such terms as $f(x_1)$ and $f'(x_1)$ (where f' denotes a set of semantic terms somehow derived from or related to that of f) rather than such terms as $f(x_1)$ and $g(x_1)$ which explains the fact that such sentences as (13)

(13) Ho Chi Minh has killed a lot of people and
LBJ lives in Texas too.

are ungrammatical, unless, for example, "lives in Texas" is intended (and understood) to mean something implying "has killed a lot of people". (Green, 1969)

Green is making use essentially of the same notion as 'sharing of variables by propositions in a conditional' which Anderson and Belnap (1968) considered a signal of the relevance relation between an antecedent and its consequent. The same notion is reflected as 'intersection of consequence' in Bellert (1973), which she lays down as an essential condition for coherence. The sentiments expressed by Dr. Green here are probably the first signs of an attempt within the TG paradigm to concern itself with well-formed sequences rather than well-formed sentences. But even Green, in a way of speaking, stays confined to the sentential framework.

Thus, while not hesitating to use the notion 'interclausal government' to account for the 'either' and 'too' phenomena, and to boldly charge (13) with 'ungrammaticality' instead of the tame unacceptability, Dr. Green

nevertheless remains content with sentences formed through explicit conjoinment. In other words, it escapes her notice that the sequence

- a. Ho Chi Minh is responsible for a lot of deaths.
LBJ lives in Texas too.

is as ungrammatical as (13) while

- b. Ho Chi Minh is responsible for a lot of deaths.
LBJ is no saint either.

is perfectly grammatical.

This failure clearly arises from the thoroughly unwarranted and empirically unmotivated distinction between 'clause' and 'sentence' in TG and the restriction of the scope of linguistic enquiry to what is within the sentence. Notice that Dr. Green herself uses these terms interchangeably. The principle governing the correct use of 'too' and 'either', as identified by Green is that, "where either occurs, there is, in the preceding clause, a negative pre-verb, and where too occurs, there is not". Our only quarrel with Dr. Green is that she failed to give the principle greater generality by observing that the principle holds even if the two clauses occur as sequential, though surface syntactically independent, sentences. In other words, an explicit espousal of a text-theoretical position would have enabled her to use the same principle to account for both (a) and (b) on the one hand and (10) through (12) and (13) on the other.

4.2.4.2. Robin Lakoff's 'If's, And's and But's about conjunction' is another remarkable attempt at formulating some notions of

textuality while still staying within the sentential paradigm. Her argument is that it is semantic compatibility Vs. semantic incompatibility or contrast, and not just syntactic parallelism holding between clauses that decides whether "and" or "but" is used for co-ordination. What decides whether the resultant complex sentences are acceptable or not is the question whether these relations can 'relevantly' hold between the conjoined clauses. Thus

- e. My grandmother wrote me a letter and six people can fit in the backseat of a Ford.

is unacceptable because the conjuncts have nothing that is relevantly common. Going further, she establishes a scale of relative acceptability on which she ranges her examples. It is not surprising that the progression of her examples from zero to marginal to full acceptability is indistinguishable from a progression from non-textuality to artificial or forced, to full and natural coherence or textuality. Yet she limits the scope of her generalizations to complex sentences, i.e., explicitly conjoined clauses. Thus the principle that points out the unacceptability of (c) above is not invoked to point out the unacceptability of

- d. My grandmother wrote me a letter. Six people can fit into the backseat of a Ford.

Neither Green nor Lakoff can be held guilty for their lapses in this regard: given the time they worked in, they were severely handicapped by the non-availability of many notions which have helped linguists following in their wake intensify the insights originally contributed by them.

Armed with such notions as 'presuppositions' and 'referential coherence' (which, we believe, could be glimpsed in the work of Green and Lakoff), Sinha (1979) succeeds in carrying their arguments to their most general conclusion. He claims, "Propositional relations of conjoined sentences cannot be discussed by analysing them in isolation. They must be examined in the linguistic context in which they occur. Given such a framework there is not much difference between a compound sentence and a sequence of two simple sentences. (25a) is as bad as (25b)

25a. (Sinha's numbering)

- * John was raised in Chicago and Mongolia is far away from Alaska.
- b. * John was raised in Chicago. Mongolia is far away from Alaska.

We explicitly recognise all instances of clausal conjoinment, whether co-ordinating or subordinating, as instances of inter-sentential relations and of text formation through the exploitation of such relations. The principle governing text formation is that the text must be coherent. Thus our system rules out all of the following.

- * The population of Amsterdam is 1000000 and I declare this meeting open.
- * The population of Amsterdam is 1000000. I declare this meeting open.
- * The population of Amsterdam is 1000000 because the 13th and 14th moons of Jupiter have been recently discovered.
- * If Indira Gandhi is the Prime Minister of India, the Skylab is not functioning properly.

Thus, a linguistic theory that embraces text as its data is able to use the principles of interclausal government formulated within the sentential framework to phenomena both within and without the sentence boundary. By neutralizing the distinction between sentence and clause, text theory can use the same set of principles to explain a wider range of facts than a grammar within the sentential constraint can.

4.2.4.3. An explicit recognition of the textual nature of compound sentences will also obviate the need for the kind of straightjacketing of data that Enkvist alludes to when he says, "Sometimes there were attempts to deal with discoursal phenomena in terms of sentence grammar. Texts were even commuted into one sentence to bring them within the scope of a existing grammars. Often, aspects of textual or intersentential context were brought into an individual sentence...." (Enkvist, 1978).

Dascal and Margalit's (1974) criticism of van Dijk (1972) is entirely based on this methodological ploy. Their strategy is to combine independent but sequentially coherent sentences into one complex sentence and then to point out that the relations that obtain in the sequence or text are preserved in the complex sentence and, since they are now relations within a sentence, they can be specified in terms of current TG theory. Hence no need for extending the scope of TG. But this is a kind of theoretical double-talk that drains all usable empirical content from the notion 'sentence'.

Broadened thus to include everything that can be coalesced, the term will completely cloud even concepts like 'subject of'. The notion 'subject of a sentence' will be absolutely unusable unless 'sentence' is conceived of as a 'minimal predication structure'. For example, the following sentence compound

I stayed in Delhi, and my brother went to Bombay.

cannot be said to have a single subject, because it is a compound of two sentences, each with a unique subject of its own. Moreover, such theoretical gimmicks are unnecessary. For it is neither van Dijk's (1972) nor our claim that TG cannot handle textual relations; in fact we believe that it can. Besides, insofar as it has dealt with phenomena like definitivization and pronominalization, it has been a partial grammar of texts. What is required is not a radical restructuring of the theory, but a recognition of the implications of its practices hitherto. Thus the very fact that two sentences can at once remain independent and be coalesced into one without damaging their semantic import proves that principles of conjoining and sequencing have a lot in common. In other words, Dascal and Margalit's methodology itself becomes a matter significant enough for linguistics to explain. What stands in the way of recognition of this implication and thus the attainment of greater explanatory power is the theoretical blinker of the surface sentence boundary. As our discussion of Green and Lakoff should make clear, our purpose is, as far as possible, to make use of notions already available, in the explanation of a wider

range of facts. That is to say, if inter-clausal relations are studied and explained while inter-sentential relations are ruled out, the theory cannot escape the charge of both being inconsistent and depleting the explanatory power of its principles. A truly generative text theory within the TG framework can thus be seen to be able to account for more facts than can be explained within the sentential framework, as well as explain all the facts explained by the latter, all the while not having to resort to any undue proliferation of theoretical terms. The most radical departure of text theory from conventional TG is its overcoming the fear of the full stop, which seems to have terrorized linguistic theory till now.

4.2.5. An integrated treatment of pronominalization, definitivisation and NP deletion

There are a number of grammatical processes that work on the basis of the identity of the linguistic elements involved. Thus reflexivization and pronominalization are sensitive to the identity of NP's, and VP deletion and gapping to identity of VP's. Conventional TG has dwelt at length on these phenomena but have failed to identify the scope of these rules, and to bring under one head phenomena treated variously. Linguists so far have been prevented from seeing the possibility of a generalization underlying these phenomena because of two reasons, viz., (1) the sentential constraint placed on linguistic inquiry, (2) the probably practically

induced confinement of attention to facts of English alone. In this section, we hope to overcome both these limitations and demonstrate the explanatory advantages achieved thereby. We shall confine our attention, however, to processes that only NP's are subject to, viz., pronominalization, definitivization, and NP deletion.

Consider the following data from English.

- 1a. A man_i came here yesterday.
- 1b. $\left\{ \begin{array}{l} \text{The man}_i \\ \text{He}_i \end{array} \right\}$ is a thief.
- 1c. $\left\{ \begin{array}{l} \text{The man}_i \\ \text{He}_i \end{array} \right\}$ tried to kill himself_i this morning.
- 2a. I saw some boys_i playing on the main road.
- 2b. I asked $\left\{ \begin{array}{l} \text{the boys}_i \\ \text{them}_i \end{array} \right\}$ to play somewhere else.
- 3a. I taught a novel_i last year.
- 3b. $\left\{ \begin{array}{l} \text{The novel}_i \\ \text{It}_i \end{array} \right\}$ was very bad.

Clearly there is a choice between pronouns and definite NP's in the b and c sentences. And, just as the c-sentence, the b-sentences also cannot be meaningfully used except in the context of the a-sentences. Following Quine, we could go even to the extent of saying that 'he', 'she', and 'it', the traditional third person pronouns, are abbreviations of, 'the man', 'the woman', and 'the object' respectively. (Quine, 1960:102-103)

Now look at the following examples from Malayalam.

(A '___' indicates the place of a deleted NP).

4. eniykku oru makanundu . 1) avan
me to one son have he

2) ___

mahaa kusritikkaaranaanu
great mischief-maker is

I have a son. He is very mischievous.

5. ente appan dellivilaanu — naale varum;
my father Delhi in is tomorrow come will

— vannal ente kuudeyee — taamasiydkuu
came if me with only stay will only

My father is in Delhi. * ___ Will come tomorrow.

*If ___ comes, ___ will stay with me only.

6. ente appan dellivilaanu
my father Delhi in is

* ayaal

he (unfamiliar)

* avan

he (intimate)

* angeer

he (honorific)

* addeeham

he (honorific)

naale varum,

tomorrow come will.

7. innale oru manuṣyan ivide vannillee?
 yesterday one man here came, no?

| | | |
|---|-----|-------------|
| <div style="display: inline-block; vertical-align: middle; border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;"> aamanuṣyan that man ayaal he (unfamiliar) * — </div> | oru | kallanaanu. |
| | one | thief is |

A man came here yesterday. { He } is a thief.

{
* —
}

In 4, the second occurrence of the NP 'my son' is marked either by a pronoun or by deletion. This deletion site can function as a point of co-reference to trigger a reflexivization transformation, as is clear from the extendibility of 4 in the following way.

4' enikku oru makanunda — mahaa
 me one son have great

| | | | |
|----------------------|---|-----------|----------------|
| kusritikkaaranaanu. | — | tannettan | uduppidaan |
| mischievous-maker is | | self | dress to (inf) |

bahalanaanu.

commotion is

He insists on dressing himself.

In 5, there is no such option and the NP 'my father' is not repeated either lexically or pronominally. In 6, the ungrammaticality is the result of violating this rule. In 7, the option is between a definitivized NP (aa manuṣyan/that man) and a pronominal form (ayaal/he - unfamiliar). The rule clearly is that if an NP is pragmatically definite in its first occurrence, (as is the case with 'my son', 'my father'), it can be deleted in its subsequent occurrences; otherwise, i.e., if the first NP is not definite (e.g., oru manuṣyan/a man), it can be either definitivized or pronominalized, but not deleted. In any case the following generalizations seem to hold. The sentences with pronominalized, definitivized or deleted NP's cannot occur except when preceded by sentences that specify the antecedent NP's. And all these are sensitive to the same structural condition viz., identity of reference. These three processes are just three different manifestations of one and the same underlying process.

If English seems to contradict this claim by the impossibility of subject NP deletion, it can be explained as a purely surface structure constraint in English. This constraint insists that every finite verb and consequently every clause or sentence must have an explicit subject on the surface. In other words, following Li and Thompson (1976), we may say that English is a 'subject-prominent' language. This is why the expletive 'there' is considered the subject in sentences like (8).

8. There are ten students in my class.

This surface structure constraint applies to all English sentences so much so that identical subject NP's in a sentence sequence have to recur either as definite NP's or pronouns except in conjoined sentences with identical NP's as the subject of the conjuncts. Thus, though (9),

9. My brother goes to Kerala and undergoes naturopathic treatment every year.

is grammatical, 10 is not

10. My father is in Delhi. *will come tomorrow.

As we have seen earlier, this constraint doesn't operate in Malayalam and so a language specific surface constraint of English need not deter us from treating pronominalization, definitivization, and deletion under one head.

We term this process 'information aging' so as to recapture the equivalence between the linguistic processes whereby indefinite NP's are subsequently either realised as pronouns or definite NP's, or are deleted, and the cognitive process whereby new information matures into old. We propose the following rule as a generalization.

11. Rt \rightarrow NP ref \rightarrow NP in following S
 identical with NP in preceding S \rightarrow
 process \rightarrow { pronominalization of NP in following S
 deletion of NP in following S
 definitivization of NP in following S }

5.2.6. Our proposal of pronominalization as an Rt process that establishes and specifies antecedent - pro-form relationships can take care not only of what are conventionally

referred to as pronouns but also other expressions like 'there', 'then' etc. The usual tendency to treat these as 'deictic expressions' or 'shifters' is a mark of linguistic theoretical prejudice or bias against their text bound character. The fact that the referents of such expressions can be demonstratively specified has been taken as proof enough for the validity of consigning them to the non-linguistic domain. In order to rectify this fault, and to establish that natural languages have themselves categorized such expressions into those that necessarily require textual antecedents and those that can have only demonstratively specifiable referents, we present a pro-form paradigm of English, Hindi and Malayalam.

The paradigm of pro-forms as presented here preserves the essential wisdom of conventional grammatical thought, but seeks to take liberties with conventional classification in order to achieve greater fidelity to facts and explanatory generality (see Table 4.1 on page 153). Thus we characterise the first category of pro-forms - including first and second persons as well as of some instances of third person pronouns in classical terms - as pragmatically controlled reference mechanisms. This is so because these are almost always used only to indicate pragmatically definitivized NP's referring to persons, places, things or time. The pronoun 'he' in Chomsky's photograph situation referred to earlier (cf. page 131) belongs to the first category. Notice especially his having to use 'this' repeatedly (this photograph, this boy, this context, etc.). To do this is to pinpoint the

Table 4.1. The Pro-form Paradigm of (E)nglish, (M)alayalam, and (H)indi.

| | | Person | | Place | Thing | Time |
|---|--|------------------|---|------------------------|---------------------------------|------------|
| 1 | Pragmatically controlled reference mechanisms | 1 | I (sg) We (pl) (E) naan (sg) naṅgal (pl) (M) mee (sg) ham (pl) (H) | here (E) | This (sg) (E) These (pl) | now (E) |
| | | | You (sg & pl) (E) nii (sg) ninaḷ (pl) (M) tuu (sg) tum (pl) (H) | ivide (M) | itu (sg) (M) iṅṅa (pl) | ippool (M) |
| | | | He, She, This, These (E) ivan (sg.m) ival (sg.f) ivar (pl) (M) yee (sg.m) yee (sg.f) yēe (pl) (H) | idhar (H) yahaā | yee (H) | ab abhi |
| 2 | Anaphors or text-syntactically controlled reference mechanisms | Identity based | He (sg.m) She (sg.f) They (pl) (E) avan (sg.m) aval (sg.f) avar (pl) (E) voh (sg. f) vee (pl) (H) | there (E) avide (M) | it, that (sg) those (pl) (E) | then (E) |
| | | | another, other(s) (E) mattu (M) duusaraa (sg) duusaree (pl) (H) | udhar (H) vahaā | atu (sg) (M) ave (pl) | appool (M) |
| | | Difference based | | | vo (sg) (H) vee (pl) | tab (H) |

pragmatic reference at play in this situation. The second category, consisting of both what are traditionally called third person forms and time, place, and object anaphors is motivated by the fact that textually introduced antecedents can only be pronominalized through these. For example, look at the following data from Malayalam and Hindi.

12. ṇaṇal ettu maniykku aagraa kkoottayude
 we eight o'clock Agra fort's

vaatilkaletti avide ṇaṇaloodu oru
 gate reached there to us a
 {
 *ivide
 here
 }

kaavalkaaran paraṇṇu onpatinee vaatil
 watchman told 9 only gate

turakkuu enna
 open that

We reached the gates of Agra Fort at 8 o'clock

{
 There
 *Here
 } a watchman told us that the gate would
 open only at 9.

13. ham loog subah aath bajee aagra kileeke
 we morning 8 o'clock Agra fort's

ph^haattak par pahunḍee {
 gate at reached vahaā
 there
 *yahaā
 here
 } ham loogoo
 we

se kahaa gayaa ki phaattak nau bajee
to were told that gate 9 o'clock

se pahalee nahi khuleegaa.
before not open will

We reached the gates of Agra Fort at 8 o'clock
in the morning. {There
*Here} we were told that
the gate wouldn't open before 9.

Notice that time reference, and pronominal reference
work in an exactly identical manner in the two languages.

14. naan naale raamane cantayil vecchu
I tomorrow Raman market at

| | | | |
|------------------|-------------------|----------------|---------------------|
| { kaanum } | { appool } | { naan } | { avanoodu } |
| | then | | him |
| | { *ippool } | | { *ivanoodu } |
| | now | | this man |

kuračču kaasu čoodiykkaam.
some money shall ask

Tomorrow I'll meet Ram at the market. {Then
*Now} I
shall ask {him
*this man} for some money.

15. kal meē baazaar mee raam se
Tomorrow I market at Ram post position
(with)

| | | | | |
|-----------------|-----------------|------------------|--------------|-------------|
| <u>miluṅgaa</u> | <u>tab</u> | <u>mēē</u> | <u>usse</u> | <u>kuch</u> |
| meet will | then | I | him | some |
| | <u>*ab</u> | | <u>*isse</u> | |
| | now | | this man | |
| <u>paisō</u> | <u>keeliyee</u> | <u>kahuṅgaa.</u> | | |
| money | for | ask will | | |

I will meet Ram at the market tomorrow. Then
*Now

I shall ask him
*this man for some money.

We think the point is clear beyond doubt that NP's linguistically introduced into the discourse are subsequently realized through the pro-forms given in our second category viz., anaphors or text-syntactically controlled reference mechanisms. Members of the first category, on the other hand, have significance only in the pragmatic context, i.e., during the enactment or reenactment of a conversational scene. This kind of a distinction, in our opinion is closer to facts and has greater explanatory power than can be achieved by a theory that dumps reference mechanisms as a whole into the non-linguistic ground. It is obvious that the clue to such distinction lies in the recognition of regularities that work on a purely linguistic level, which in turn are shown up at their richest in texts rather than in sentences. It is the textual function common to all anaphors that we have sought to underscore by classing them all as instances of Rt and by expanding them as referring to 'NP in immediately

preceding S', 'location in immediately preceding S', 'time in immediately preceding S' etc. This analysis constitutes an attempt at achieving greater generality and explanatory power.¹

4.2.7.1. More on definitivization

NP definitivization was treated in traditional grammar as an anaphoric process functioning in much the same way as deictic or demonstrative and personal pronouns. Thus Palek (1968) refers to Brugmann (1904), Sturtevant (1939) and Christophersen (1939) as attempts at providing a unified treatment to these phenomena. This was possible because the traditional grammarians were not constrained by the sentence boundary, and, with no embarrassed self-consciousness, could make use of notions like "substantives previously materially expressed", and "immediately preceding definite context". In this section we shall attempt to establish a case for recapturing the insights of these traditional treatments and to incorporate them into a theory of texts in the hope that such an attempt would be an advancement towards greater generality.

¹For a similar, if not identical treatment of anaphoric processes, see Sag and Hankamer (1977). They differ from us mainly in the fact that they deal with VP deletion, gapping, and sentence pronominalization all as instances of anaphora since they all work on the basis of identity, while we restrict our attention to processes on NP. What is especially interesting, however, is the equation that can be made between what they call 'syntactically controlled anaphora' and what we call "textually controlled reference mechanisms".

The underlined portion clearly indicates that Baker is making use of the textual notion of definitivization as a process capable of cutting across sentence boundaries. But he limits the scope of the term 'previous' to an 'existential' occurring previously in the discourse. This severely constrains the applicability of his definiteness - introducing rule. One wonders whether definitivization is sensitive only to ontological statements or existential propositions. This is at best only a sufficient and not a necessary condition for definitivization. The same applies for pronominalization, which, however, does not find a place in Baker's paper. Baker's linguistic contribution, thus achieves the same thing as is achieved by Russell's (1905) logical treatment of definite descriptions where what he essentially says is that the use of the definite article is an ontological commitment on the part of the user, i.e., that a proposition like,

The king of France is bald

is a conjunction of three underlying propositions, viz.

There is a king of France
The number of the kings of France is one
This individual is bald.

and thus is logically equivalent to

$$(\exists x) (Kx \ \& \ (y) \ (Ky \longrightarrow y = x) \ \& \ Bx)$$

(where K = King of France, B = Bald).

Our contention is that this kind of analysis of definiteness in terms of underlying presuppositions is essentially paradigmatic in nature and whatever its merits in logic, is severely limited for the purposes of syntagmatic

linguistic explanation, that is, explanation in terms of the linear progression of communication. In other words, such an analysis goes only 'beneath' the given proposition and not 'beyond' or 'backwards', which a linguistic analysis has to do if its explanation has to recapture the essential dynamism of communication. The apparent syntagmaticity of the logical formula achieved through the incorporation of an existential quantifier is only of limited use in devising linguistic rules governing definitivization.

4.2.7.4. Hawkins (1978) fares much better in this regard in that he directly relates the import of his investigation into definitivization to linguistic theory and draws conclusions that are at once general and coincidental with those we ourselves draw from a text theoretical point of view. To quote,

There are basically two types of semantic judgements which the native speaker can make about the sentences which he judges grammatical. He can supply information on when he would use particular morphemes and constructions, and on what he understands them to mean when he does use them. For example, the native speaker will judge that the following sequence of first-mention indefinite description is appropriate.

3.01. Fred was discussing an interesting book in his class.

3.02. I went to discuss the book with him afterwards.

The indefinite and definite articles may therefore be used on occasions like this. In addition, the native speaker can tell us that when they are so used the definite description, the book is understood as referring to the same object as the preceding indefinite description (Hawkins, 1978).

Hawkins's argument has the obvious implications that 3.01 and 3.02 together form a text by virtue of their referential coherence achieved through the syntactic process of definitivization. Thus it is very much a part of the native speaker's linguistic knowledge and intuition to effect and perceive such cohesive devices. Hawkins's close affinity with text theoretical notions, especially as outlined here, comes out strikingly clear when he says,

... the act of referring anaphorically involves a form of instruction to the hearer to match the linguistic referent of the definite description with a particular object in his mind, an object which has been entered into his memory store in the course of some previous conversation with that speaker. (Hawkins, 1978).

This can be translated into our terms to read something like the following: Members of the category Rt embody meta-level instructions to the language user as to where to locate the referents of the definite descriptions at hand.

Searle's (1969) analysis of reference as a speech act lays down three conditions at least one of which a definite description (i.e., a Def. Art + N. phrase) must meet in order for it to qualify as a truly referring expression. According to him,

Either the expression uttered must contain predicates true of only one object, or its utterance together with the context must provide some ostensive or indexical presentation of one and only one object, or its utterance must provide a mixture of indexical indicators and descriptive terms sufficient to identify only one object. (Searle, 1969)

Thus Searle restricts the applicability of definitivization to singular nominals (the 'only one' condition), nominals restrictively relativized (unique description condition) or nominals ostensively demonstrated (the indexical presentation condition). This restriction is too severe to be linguistically useful. What is more indefensible than this is the seal of finality he puts on the possibilities of definitivization, saying, "... these kinds of identifying expressions - demonstrative presentation, unique description, mixed demonstrative and descriptive identification - exhaust the field" (ibid).

This kind of limitation seems incomprehensible especially in the light of the fact that Searle himself has used notions like 'previous mention', 'larger context', and has talked of the need to provide the hearer with 'sufficient means to identify the object from the speaker's utterance of the [definite: TC] expression'. The point of our criticism is that Searle avoids speculating altogether as to the linguistic means made available to the hearer to help him identify the reference of definite descriptions. Text theories seek to formalise precisely these linguistic means and, in that process, treat definitivization, along with pronominalization of deletion, all of which are actually instances of the same phenomenon.

4.2.7.6. We have tried to steer clear of the philosophical issues raised by the philosophers with regard to definite

descriptions while at the same time trying to make use of linguistically significant insights available in their analysis. Thus we have found as very interesting the notion of an existential presupposition underlying a proposition involving a definite description. Nevertheless, treating it as 'underlying' and as 'existential', while correct, is only part of the story. Natural languages have more ways of introducing new individuals into discourse and of continuing to talk relevantly of them. We state our thesis thus,

16. A definite description (e.g., the +N phrases and pronominals in English) is used when and only when the speaker has introduced in the immediately preceding S, an indefinite NP (e.g., $\begin{Bmatrix} a \\ \text{some} \end{Bmatrix}$ +N for count nouns, and some +N for mass nouns in English), that is co-referential with the definite description.^{1,2}

¹We exclude by fiat pragmatically definitivized descriptions from the scope of this rule. That is to say, indexical expressions (this man, that man, etc.) and expressions deriving their definiteness from shared assumptions or belief contexts (the author of Waverley, the morning star etc.) are considered a separate class. By doing so, we expect to maintain a distinction that ethnomethodologists make between 'retrospective - prospective sense of occurrence' on the one hand and the 'et cetera assumption' on the other. Cicourel (1974) defines the two in the following way.

1) Retrospective-prospective sense of occurrence

"Both speaker and hearer find that present understandings of what is being said are clarified by later comments. They also discover that earlier comments inform their present talk" (Cicourel, 1974).

2) The et cetera assumption

"Both speaker and hearer assume that common background understandings inform what is being said" (ibid).

contd...

Our conception of 'information aging' and its tie up with grammatical processes and thought are closely paralleled by Harris (1751). He says,

A certain object occurs ... what is it? An individual - of what kind. Known or unknown? Seen now for the first time, or seen before and now remembered? — 'T is here we shall discover the use of the two Articles A and THE. A respects our primary Perception, and denotes individuals as unknown; THE respects our secondary perception and denotes individuals as known. To explain by an example - I see an object pass by, which I never saw till then. What do I say? There goes A Beggar with A long Beard. The man departs and returns a week after. What do I say then? There goes THE Beggar with THE long Beard. The Article only is changed, the rest remains unaltered. Yet mark the force of this apparently minute change. The individual, once vague, is now recognized as something known, and that merely by the efficacy of this latter article, which tacitly insinuates a kind of previous acquaintance, by referring the present Perception to a like Perception already past (Wales, 1971:251) [emphasis in Wales, 1971, double emphasis mine: TC]

Harris' example is particularly suitable for our purpose here, not only because of his astounding terminological contemporaneity but also the maintenance of the chronological order we preserve by showing new information or comment aging into old information or topic in discourse.

continued...

In our words, the distinction is between text syntactically controlled anaphora and pragmatically controlled reference mechanisms. We concentrate on the former without any intended disparagement of the latter.

- ² The apparent counterexample of definite NP's followed by relative clauses can be taken care of by an analysis of relativization as conjoining instead of as embedding, i.e., by deriving "The man who comes here often is a criminal", from "A man comes here often - the man is a criminal" rather than from "The man - the man comes here often - is a criminal".

4.2.7.7. Chafe (1976) treats definiteness in relation to a number of other related phenomena like, givenness, contrastiveness, and topicalization. Among other things, he raises the question, "How long does definiteness last?" and proceeds to give an answer with the help of the following example.

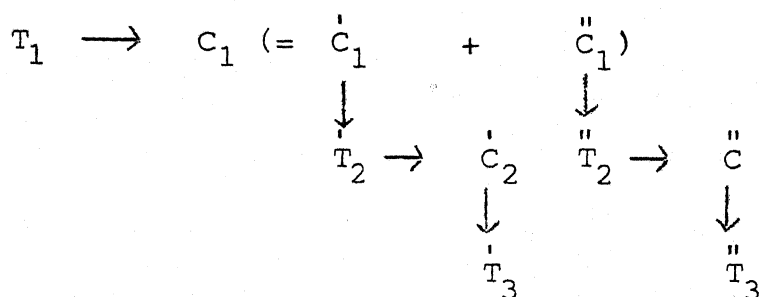
On page 13 of Arthur Koestler's The case of the midwife toad there is the sentence one of his [Paul Kammerer's] pockets contained a letter addressed 'to the person who finds my body'. The letter is not mentioned again until page 118 where we find a sentence beginning As far as we know, he wrote four farewell letters (apart from the note 'to the person who will find my body') ... Thus, with the aid of the quote from the letter, the reader is assumed to be able to identify what letter this is, and we can say that the status of definite for this referent has been preserved over 105 pages. It may be relevant that most of these intervening pages contain a flashback setting forth the events which led to Kammerer's suicide, and that it is only at the beginning and end of the book that the reader is led to think about the circumstances of the suicide. Thus the scene on page 118 connects up with that on page 13 (Chafe, 1976

Chafe's example is very interesting, but the conclusion, unfortunately is incorrect or at least unhappily phrased. What has been preserved over 105 pages is not 'the status of definite', but the possibility of definitivization, i.e., the "a letter" of page 13 'ages', over 105 pages, into the "the note" of page 118. What begins as indefinite is processed into the definite over a long stretch of discourse, or, equivalently, the definite NP of page 118 is interpreted in terms of the indefinite NP of page 13. Chafe's example is thus a justification for our minimum context hypothesis which finds expression in the form of the idealization 'the immediately preceding S' that we have used in our formulation

above. Remember that the reader of Koestler's book referred to by Chafe is able to recover the relevant information-bearing sentence from among a large mass of data in order to process the definite NP back to its antecedent.

4.2.7.8. Our treatment of definitivization thus captures the processive or dynamic aspect of communication in progress by characterising it as the text syntactic consequence of the semantic phenomenon of 'information aging', i.e., the process by which new information conveyed through indefinite NP's introducing new entities turns into old information manifesting as definite NP's, pronouns, or deleted NP's. Our emphasis on definitivization rather than on definiteness, thus constitutes a true explanation of the 'given-new', 'theme-rheme', 'topic-comment' contract, through the dialectics of which communication achieves its dynamism. Thus it does not rest content with describing topic as 'that NP which occurs at the extreme left position in a sentence' but presents it as a result of an aging process. Nothing is therefore absolutely 'topic' or absolutely 'comment' but it is communication which makes either what it is. That is to say, outside of discoursal or text-grammatical framework these terms have no empirical value. Our analysis, we believe, recaptures the essential spirit of Keenan and Shieffelin (1976) and Sinha (1974). The latter, following Daneš (1970) schematizes the topic-comment relationship in the following way.

44. (Sinha's numbering) (Sinha, 1974)



Though our point of view may not be identical with that of Sinha or Daneš in detail, we underscore our agreement with them in the concept of topic-comment progression as contributing to communicative dynamism. Our view also agrees with Chafe (1974) who considers "... low pitch and pronominalization as surface structure indices of givenness" and with Halliday (1967) who observes that, what is 'given' is the same as what is 'situationally recoverable'. Taken together, these justify our grouping together of NP definitivization, pronominalization and deletion as different manifestations of one and the same process of information aging. Such a characterisation makes greater claims than hitherto made by any sentence-bound theory to empirical i.e., cognitive or psychological reality. It constitutes a hypothesis about how language users actually use textually given information to solve reference and recovery problems. Inter alia, it also seeks to strike a balance between the otherwise irreconcilable concepts 'item' and 'process' and declarative and procedural knowledge. For our endeavour has been to uncover the actual process that underlies items like pronouns and definite NP's.

4.2.8.1. Connectives

Transformational grammar has generally taken connectives for granted. Apart from the works of Robin Lakoff and Georgia Green referred to earlier in this chapter, we know of no extended treatment of connectives. Stockwell, Schachter and Partee (1973) as well as Dougherty (1972) deal only with co-ordinating conjunctions and that too with the emphasis mainly on their syntactic properties. Even here attention has been limited to the co-ordinating conjunctions 'and', 'or', and 'nor'. However, Stockwell (1977) presents the following analysis. He considers them all as adverbs and divides them into (1) predication over prepositions, which are further divided into factives, modalities, quantifiers and comparatives of frequency, intensification and comparison; and (2) predication of motivations, conditions, and transition. Given below is his treatment of the second category in full.

Purpose : John moonlights to make ends meet =
John's purpose in holding two jobs is
to make ends meet.

Cause : John took up the cello because he was
bored with golf = The cause of John's
action of taking up the cello was his
boredom with golf.

Conditional : If five students show up, the class
will be held = The condition on holding
the class is that five students must
show up.

If we had world enough and time, we
would read more metaphysical poetry =
The condition on our reading more meta-
physical poetry is the (counterfactual)
condition that we would have to be less
busy than we are.

Transitional: Nevertheless, I'll read whatever I want to. = In spite of what has just been asserted, I'll read whatever I want to.

On the other hand, that might be a form of suicide = An alternative interpretation of the previous assertion is that it might be suicide. (Stockwell, 1977:47-48)

Our criticisms of this method of treating the connectives, especially in a grammar that seeks to explicate the foundations of syntax, are the following.

- 1) By attempting to classify and describe by means of exemplification, Stockwell adds a taxonomic component to an explanatory grammar. It is not clear where in the system of TG this component will fit in; the PS, lexical, transformational, or semantic, component. The two most suitable ones are the lexical and the semantic (interpretive), components. It cannot be the former, because there are no feature specifications and no mental lexicon can be conceived of as using examples in the fashion of Stockwell or of the OED. And it cannot be the semantic component because it being essentially interpretive, the input to it has to be logical forms of sentences and not formatives with exemplificatory sentences in tow. Thus the only conclusion is that it is an adhoc adjunct sticking out like an ugly outgrowth on the otherwise elegant and symmetrical system of TGG.
- 2) By making use of purely semantic notions like motivation, condition, cause etc., as the basis for

classification, Stockwell drives himself to a position where each connective has to be exemplified individually, thus losing a chance to achieve greater generality on the basis of their common syntactic properties.

- 3) By adherence to a theoretical position that persists with an unmotivated distinction between 'clause' and 'sentence', he finds himself compelled to exemplify some connectives in terms only of the sentences in which they occur, while for the others he has to make reference to a sentence or assertion made prior to the one in which they occur.

A text grammatical treatment of these connectives will obviate criticism, (1) by virtue of the fact that it incorporates the specification of the function and meaning of connectives into the PS component of the grammar. Thus all the structural information necessary to trigger lexical as well as grammatical transformations which are sensitive to the syntax and semantics of connectives will be available at the deep structure level (cf., Chapter 3, especially the model of English PS component). Such meaning-specification may be unusual from the point of view of conventional TG but is harmonious with our conception of syntax as a theory of semantics. In fact the PS rules that specify the meanings of connectives are indistinguishable between syntactic and semantic, or formal and functional. That is to say, their semantic properties are non-distinct from the rules of their proper syntactic use.

The implications to be drawn from this and other theoretical standpoints elaborated in Chapters 2 and 3 will take care of criticism (2) and (3). For example, by defining a sentence as a simple argument-predicate relationship, the theory demolishes the distinction between 'clause' and 'sentence' and can thus state the context for the occurrence of all these connectives as 'intersentential', with no fear of inconsistency between theory and practice.¹ Thus, by making reference to this general or abstract notion — extracted no doubt from concrete instances such as Stockwell's examples —, the theory is able to achieve a generality that no amount of exemplification can hope to match. Our claim is as follows: All connectives have the same function (of information augmentation) which they carry out by indicating what kind of relationship holds between sentences conjoined by them.²

¹ Notice that Stockwell's examples suggest a distinction between connectives like 'if' and 'because' (traditionally called subordinating conjunctions) and those like 'nevertheless' (traditionally called transitional devices), not to speak of co-ordinating conjunctions. This is in spite of the fact that all these are similar if viewed from the text theoretical perspective: They all specify the nature of the logical relation holding between the propositions joined by them.

² In our formulation, sequencing or immediate precedence and succession of sentences is no different from conjoining. Remember that TG theorists go to the extent of admitting that the full stop is equivalent to 'and', i.e., it can signal semantic continuation or cumulation. But other kinds of relations, even those represented by the so called subordinating conjunctions can also be signalled by the full stop e.g. I don't like Neko soap because it gives me rashes = I don't like Neko soap. It gives me rashes.

Conversely, all those elements which augment information by indicating the kind of relationship holding between sentences conjoined by them must be considered connectives. Sentence combination or sequencing can be effected on the basis of semantic compatibility relations, which may be, causal, concessive, cumulative or continuative, contrastive, resultative, locative, temporal, attributive, manneric or alternative (the list is not exhaustive). What Magnusson (1954), following Jespersen (1924) means by differentiating conjunctions from ordinary adverbs and prepositions on the basis of the fact that conjunctions take clauses as their objects is essentially the same principle.

/e

4.2.8.2. Akmajian and Heny (1975) treat only the coordinating conjunctions 'and' and 'or'. In spite of the fact that they feel free to talk about the reconstruction of the meaning of a sentence fragment like

Fonda was too

'on the basis of the meaning of the preceding sentence'

Ellsberg was arrested by the FBI

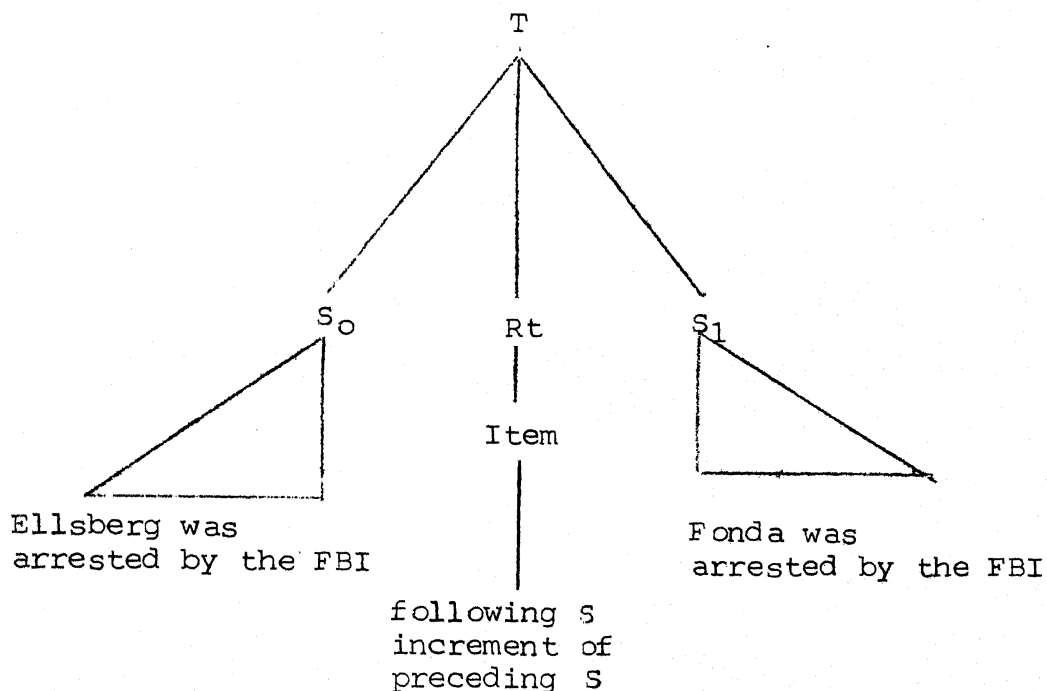
they propose to take care of the generation of such sentences

as Ellsberg was arrested by the FBI and Fonda was arrested too.

by means of a highly 'item-specific' structural condition

SC 1 + $\left\{ \begin{matrix} \text{and} \\ \text{or} \end{matrix} \right\}$ + 2, paired with the structural description
 SD $\begin{matrix} s \\ 1 \end{matrix} [s - s] \begin{matrix} s \\ 2 \end{matrix}$ for a 'conjunction insertion' (obligatory) transformation.

In our formulation, a structure like the following



fully specifies the nature of the interrelation between the two S's and, lexical insertion rules, sensitive to the information given under the Rt node unambiguously or uniquely selects 'and'. Deletion based on identity and Georgia Green's rule for 'too' insertion, will give the surface structure, 'Ellsberg was arrested by the FBI and Fonda was too'. Unless the information under Rt is changed to "If not the preceding S, the following S", 'or' cannot be introduced. Akmajian and Heny, on the other hand, do not specify any mechanism which would ensure the introduction of 'and' or 'or', according as the situation demands. Moreover, positing a transformation with the sole purpose of introducing 'one' or 'two' conjunctive devices is unnecessarily expensive. Besides, on their own admission, it cuts at the very root of Katz-Postal hypothesis regarding the meaning preserving nature of transformation.

The very same criticism can be levelled, with probably greater justification, against Bresnan's (1972) analysis of sentences with 'else'. She gives the following two sentences.

(22) (Bresnan's numbering)

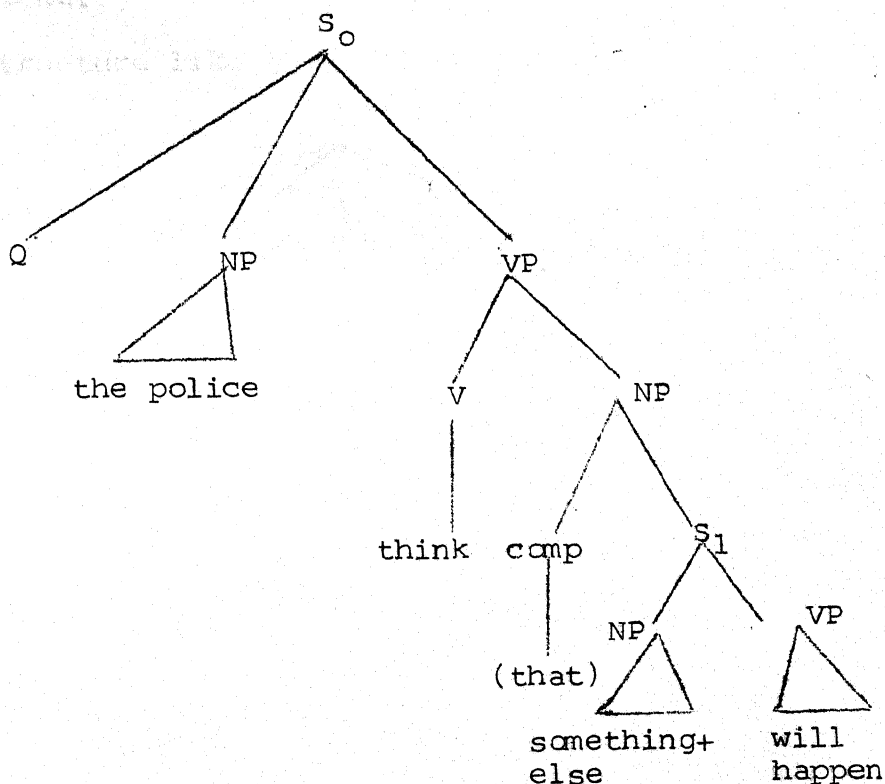
What else do the police think will happen?
 What do the police think will happen?

She gives the derivational history of the sentences as follows.

(Q (the police think (something else will happen)))

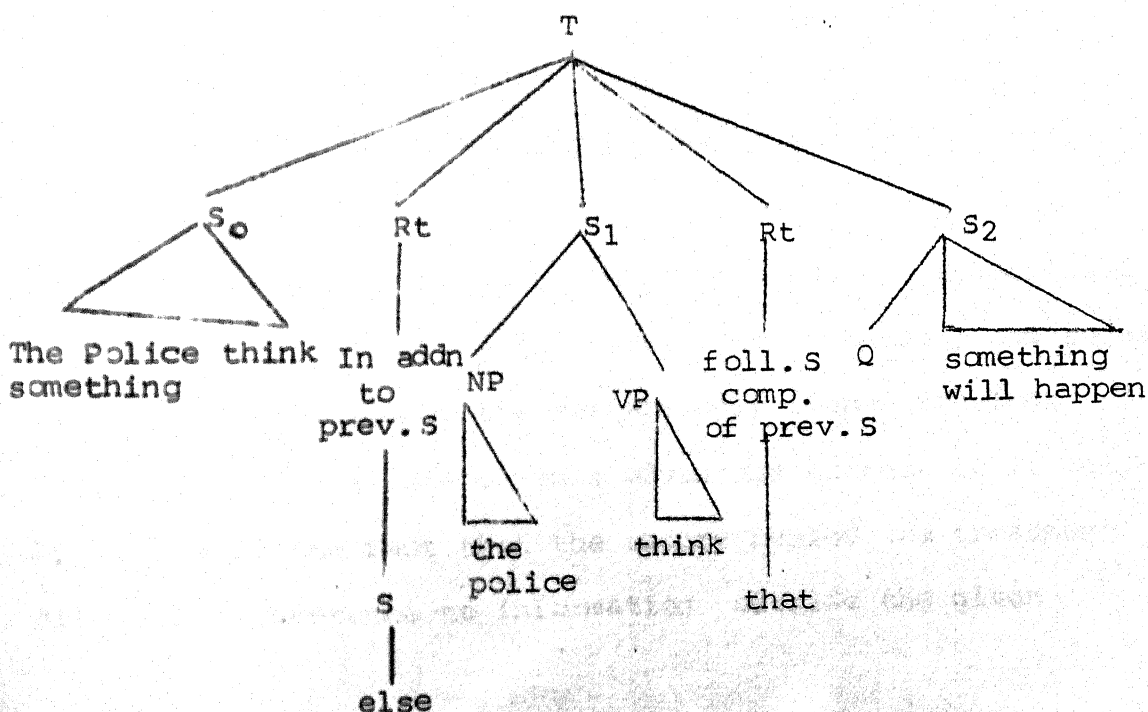
| | | | | |
|----------------|---|------|---|---------------------|
| 1 | 1 | +wh1 | 1 | |
| | | 1 | 2 | Topical stress |
| 2 | 2 | 1 | 3 | Nuclear stress rule |
| <hr/> | | | | |
| Something else | | | | |
| +wh 1 | | ∅ | | Question formation |

This suggests an initial phrase marker like



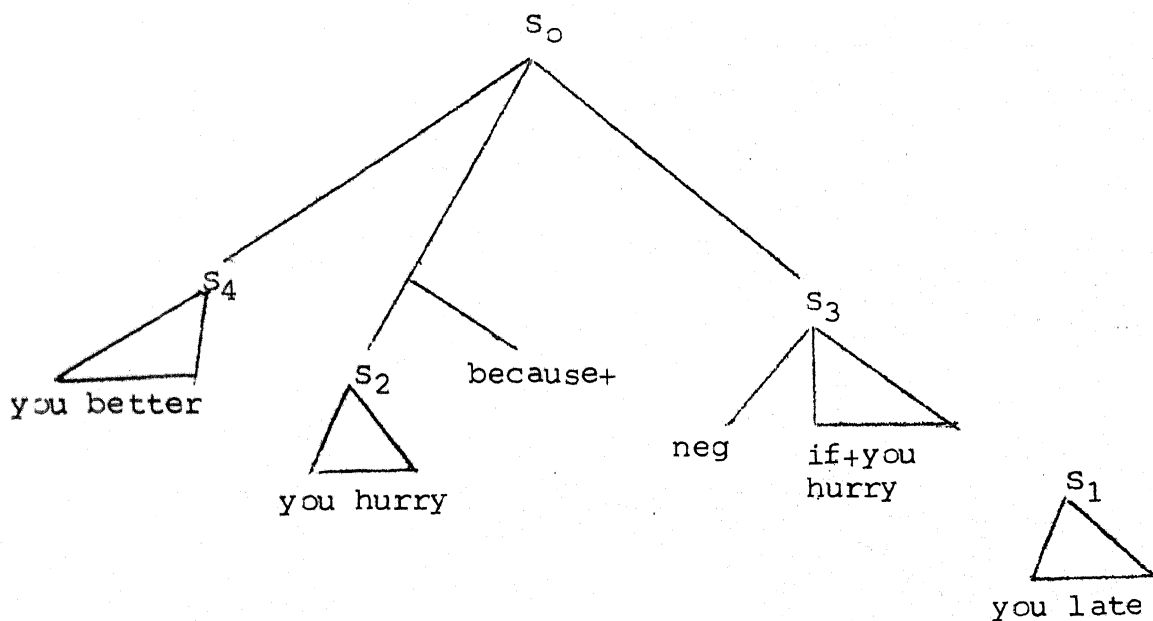
In the absence of any explicit demonstration of the constituent structure of 'something else', it has to be taken for granted that it is directly dominated by one node viz., NP. Then, 'wh' is generated only under 'something', but when attracted to 'Q' it carries 'else' along with it to form 'what else' sentence-initially. This kind of a now-loose, now-fast relation between 'something' and 'else' is definitely arbitrary and counter-intuitive. Moreover, the analysis offers no explanation for the fact that 'else' is used in a sentence only if it has a definite linguistic context, i.e., when it is preceded by another sentence with which it stands in a continuative or incrementative relationship. Besides, it tries to cover up this fact by means of the purely sentence bound treatment.

A structure like the following



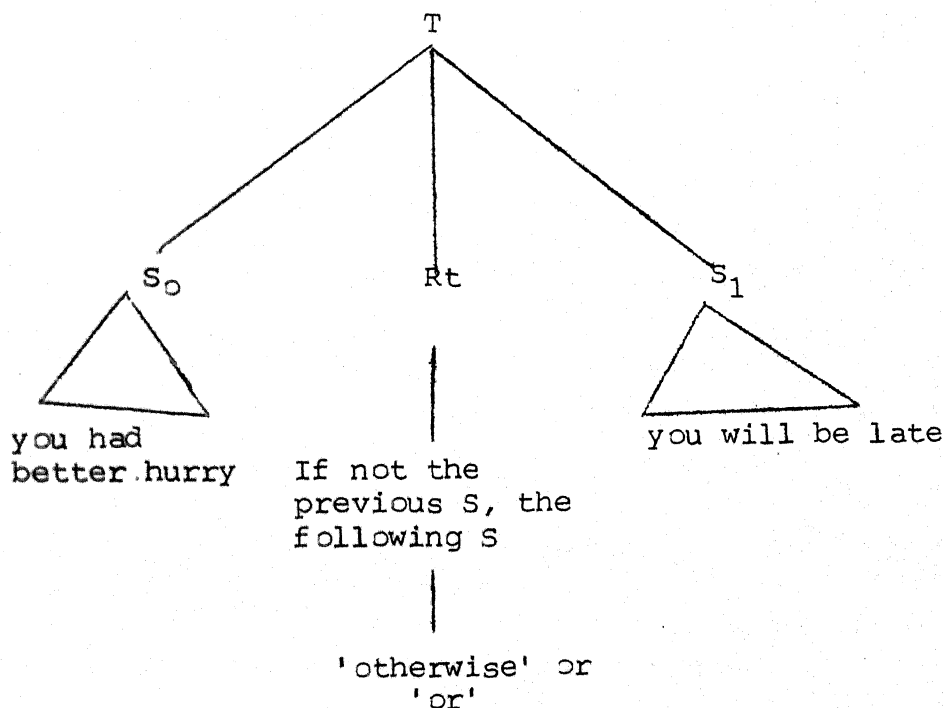
sentence in the explication of the structure of the given sentence.

Helen Pyne-Timothy's (1975) analysis of the grammar of 'otherwise' is, to say the least, nothing short of fantastic. In order to derive a simple text like you had better hurry: otherwise you will be late, she posits a deep structure like the following.



Criticising TG just on the basis of Ms Pyne-Timothy's claim that she is working within the Standard Theory framework would be unfair to TG. For, the peculiar generative rules that give rise to the deep structure given above and the transformational rules that convert it to the surface structure are products purely of Ms Pyne-Timothy's imagination and do not form part of TG's theoretical machinery. However, TG has responsibility in this regard insofar as its clouded

notion of 'sentence' is what makes it appear practically possible to specify within the confines of sentence grammar the structure of what actually is a text. Such antics as Ms Pyne-Timothy's would simply be obviated by a theory that explicitly recognised otherwise as a Relatant, i.e., as a connective whose task it is to specify an intersentential relation. Such a theory would generate otherwise under the Rt node with the specification 'If not the previous S, then the following S'. Hence the structure



Such an analysis would have an added advantage as well; i.e., that of establishing the meaning equivalence between otherwise and or. It would account for

You had better hurry; otherwise you will be late =
You had better hurry; or you will be late.

It can also account for the logical equivalence between

$(p \rightarrow q) = (-p \vee q)$, i.e., between the given sentence and
 If you do not hurry, you will be late.

Our analysis of the grammar of otherwise gives an intuitively more satisfying account of the logic of the relations between the propositions involved here. Notice that the specification under Rt viz., 'if not the immediately preceding S, then the following S' provides the negation operator, which, when incorporated into the antecedent, converts an implicative proposition into a disjunctive proposition, i.e., converts $(p \rightarrow q)$ into $(-p \vee q)$ without any damage to the truth value of the original proposition.

Our kind of treatment of connectives can thus be seen to be capable of achieving greater generality than is possible under sentence theoretical framework because only the former and not the latter gives a unified treatment to both subordinating and co-ordinating conjunctions. Moreover, our analysis gives a principled demonstration of the inter-translatability that obtains between some connectives. It also provides an explanation for the phenomenon of what Waterhouse (1963) has called 'dependent sentences'.

4.2.9. Conclusion

What we have tried to do in this thesis is to present a case for the extension of the scope of TG's inquiry to processes that work across surface sentence boundaries. The methods or mechanisms for incorporating these textual

or intersentential relations into the grammar presented here represent tentative suggestions and are meant primarily as a demonstration of the possibility of the enterprise of text grammar.

This thesis by no means makes a claim for an exhaustive coverage of all the issues relating to 'the vast and exciting field of discourse'.¹ A lot more work remains to be done on transformational sensitivity to textual relations, surface ordering rules, preservation of case roles across sentence boundaries, sequence of tense in texts, presuppositional binding of texts etc., before we, as linguists, can seriously stake a claim to have understood the mechanism underlying text-production and processing. This thesis is nothing less, and it is not for us to say if it is anything more, than (1) an articulation of hope in the vast reserves of fascination for linguists held by text studies (2) an immersely personal statement of conviction regarding the best direction that linguistic research should take, and (3) an unabashed admission of a sense of modesty inevitably induced when confronted with the potentialities of that wondrous three-letter phenomenon: MAN.

¹ The phrase is due to Dr. Colin P. Masica; Presidential address to the Session on 'South Asia as a Linguistic Area'; Conference on South Asian Languages and Linguistics, January, 1980, Hyderabad.

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